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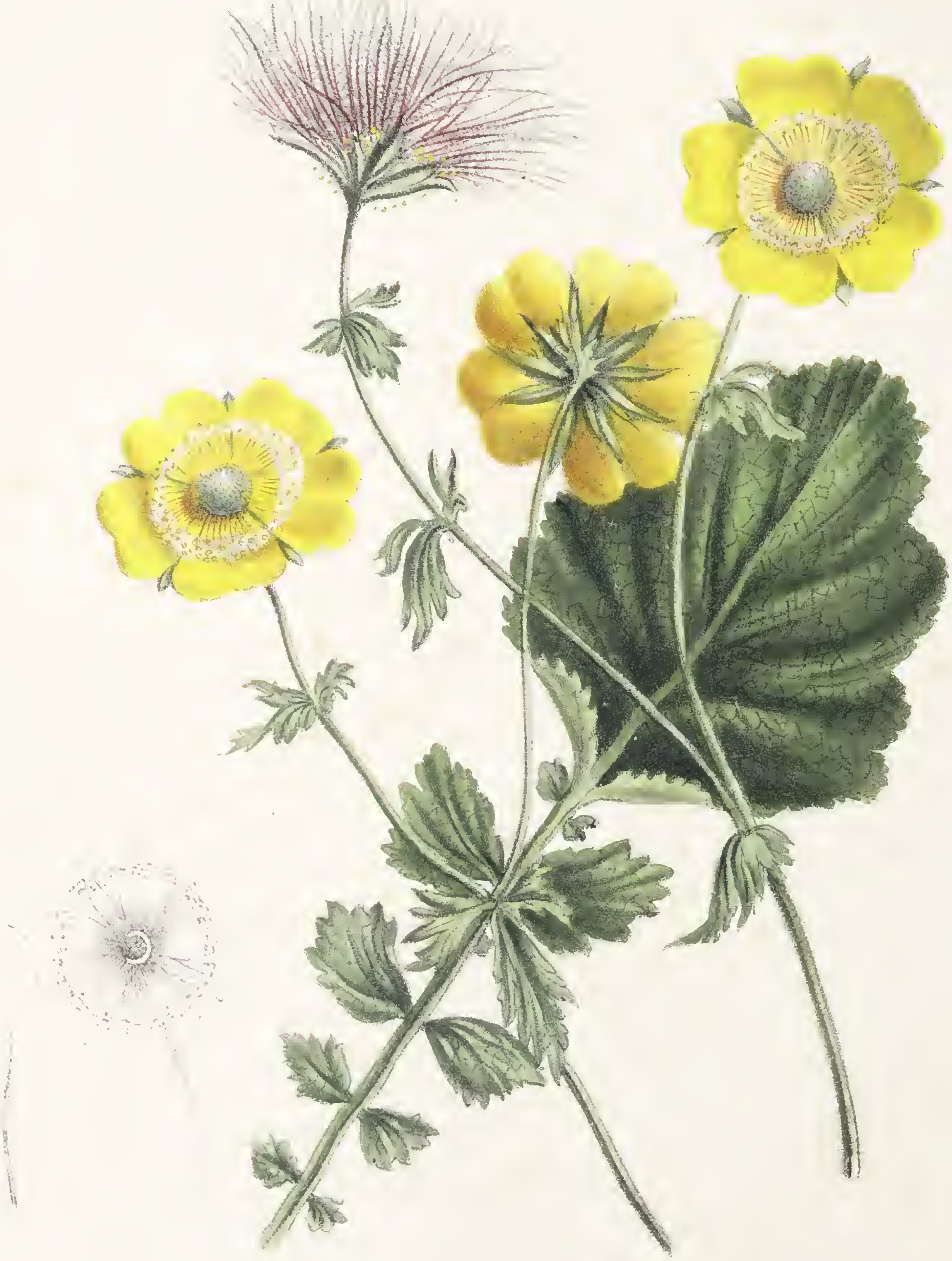

Sieversia Montana

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THE

FLORAL CABINET,

AND

MAGAZINE OF EXOTIC BOTANY.

CONDUCTED BY

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AND

FREDERIC WESTCOTT, Esq.,
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SIEVERSIA MONTANA.

(*Mountain Sieversia.*)

LINNEAN SYSTEM.	NATURAL ORDER.
ICOSANDRIA POLYGYNIA.	ROSACEÆ. § DRYADEÆ. VENT. § POTENTILLEÆ DECAND.

GENERIC CHARACTER.

Sieversia (Willd.) *Calyx* decemfidus, laciniis alternis accessoriis. *Petala* 5. *Stamina* indefinitè numerosa. *Ovaria* indefinita, ovulo adscendente. *Styli* terminales, continui. *Achenium* stylo toto persistenti aristatum. *Embryo* erectus.—(*R. Brown, in Parry, Voy. Append. p.* 276.)

Calyx ten-cleft, the alternate segments accessory. *Petals* five. *Stamens* indefinitely numerous. *Ovaries* indefinite, with an ascending ovule. *Styles* terminal, continuous. *Achenium* awned with the whole persistent style. *Embryo* erect.

SPECIFIC CHARACTER.

S. Montana. *Caulibus* erectis unifloris; *stolonibus* nullis; *foliis* radicalibus interrupti pinnatifidi, lobis lateralibus sensim minoribus dentatis, terminali ovato-oblongo obtuso maximo obtusè biserrato, caulinis unilobis stipulisque profundè dentatis; *flore* magno, laciniis; *calycinis* indivisis; *petalis* obcordatis, calyce longioribus; *stylis* patentibus valdè pilosis.

Stems erect, one-flowered; *stolon* none, radical *leaves* interruptedly pinnatifid, terminal lobe ovate, oblong, obtuse, very large, and bluntly biserrate; lateral lobes smaller, toothed, stem-leaves, one-lobed, and as well as the stipules deeply toothed; *flower* large; segment of the *calyx* undivided; *petals* obcordate, longer than the calyx; *styles* spreading, very hairy.

Geum Montanum. Sect. Oreogeum, De Cand. vol. ii. p. 553.
Geum Montanum. Linn. spec. 717.—Jacq. Austr. 4, t. 373.
Caryophyllata alpina lutea. Bauh. pin. 322.

A very hardy perennial, flowering freely during July and August, and well worthy a place in the border, its flowers being large, and of the richest yellow. It is a native of the mountainous parts of Europe, as the Alps of Switzerland, Austria, &c., and although introduced into this country long ago, is still by no means common in collections. Our drawing was taken from a plant raised in the Birmingham Botanic Garden, from continental seeds received in 1835 from John Hunneman, Esq.

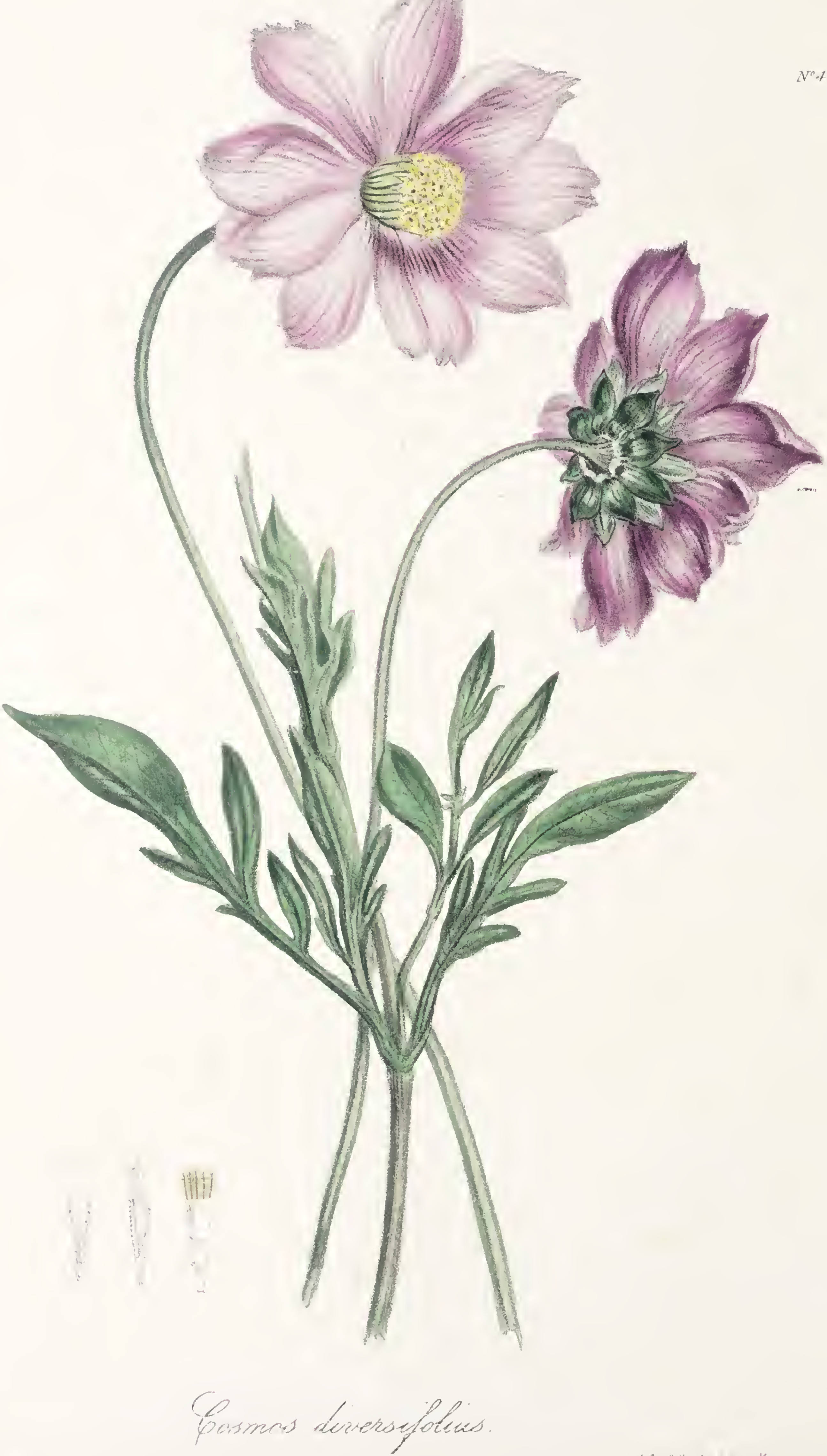
The station to which our plant belongs in the natural arrangement is in the order *Rosaceæ*, consisting of plants which are found to agree in certain important characters with the genus *Rosa.* The *Rosaceæ* constitute a most distinguished natural order, comprising numerous genera, which naturally divide into four principal groups, each of which may be readily identified by certain peculiarities of structure. 1. *Roseæ*, consisting almost entirely of the true roses, which have always been considered the chief beauties of the garden. 2. *Potentilleæ*, or the cinquefoil tribe, consisting of numerous genera, some of which are valuable for their delicious fruit, as *Rubus* and *Fragaria.* In this tribe *Sieversia* takes its place, a genus first named by Willdenow, in honour of M. Sievers, a Russian botanist and traveller.

The plants of this genus were formerly considered to belong to the genus *Geum*, which in fact differs chiefly if not entirely in the structure of its awns, which are geniculated, while in *Sieversia* they are continuous and jointless. The distinction appears sufficient to separate the genera; indeed its character has been acknowledged and amended by Dr. Brown, and is retained by Dr. Lindley in his *Nat. Syst. Bot.* Of the other two groups of this order it is unnecesary to speak on the present occasion.

Rosaceæ are found chiefly in the temperate or cold climates of the northern hemisphere, but few are met with in the southern hemisphere, or within the tropics; while at the Cape of Good Hope they are never seen.

Fig. 1, calyx, showing the insertion of the stamens; fig. 2, the hairy awn.

N° 47.



Cosmos diversifolius.

A Green del.

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COSMOS DIVERSIFOLIUS.

(*Various-leaved Cosmos.*)

LINNEAN SYSTEM.	NATURAL ORDER.
SYNGENESIA FRUSTRANEA.	COMPOSITÆ, TRIBE SENECIONIDEÆ.

GENERIC CHARACTER.

Cosmos (Cav.) *Capitulum* multiflorum radiatum, ligulis neutris. *Involucrum* duplex, utrumque squamis 8-10 basi, plus minus concretis, apice acuminatis. *Receptaculum* planum, paleaceum; paleis membranaceis, in filum elongatum productis. *Styli* rami apice incrassati, hispidi, in conum subulatum producti. *Antheræ* apice appendice scariosâ cordatâ superati. *Achenium* tetragonum, exalatum, rostratum, et interdùm stipitatum, aristis 2-4 retrorsùm piloso-scabris deciduis coronatum. *Herbæ Americanæ:* annuæ et perennes, glabræ aut vix pilosulæ, elatæ, ramosæ. *Folia bipinnatisecta*, lobis linearibus lanceolatis, sæpiùs margine integerrimis. *Capitula* ad apices ramorum longè nudorum, solitaria. *Discus* intensè luteus. *Radius* versicolor. *De Cand.* Prod. vol. v. p. 606.

Capitulum many-flowered, rayed, rays neuter. *Involucrum* double, each containing 8-10 scales, more or less joined at the base, tapering towards the apex. *Receptacle* flat, chaffy; chaff membranaceous, protruding into an elongated thread. Branches of the *style* thickening at the apex, hispid, elongating into an awl-shaped cone. *Anthers* attached to a scarious, heart-shaped appendage at the apex. *Seed* four-sided, wingless, beaked, and sometimes stipitate, crowned with two deciduous hooked rough awns. Plants natives of *America*, annual or perennial, smooth, or scarcely hairy, tall, branched. *Leaves* bipinnately divided, lobes linear lanceolate, oftentimes entire at the margin. *Branches* long, naked, each bearing at its apex a solitary flower. *Disc* deep yellow. *Ray* of different colours.

SPECIFIC CHARACTER.

C. diversifolius. *Caule* glabro; foliis petiolatis, bipinnatisectis, lobis subapiculatis, margine scabris; *petalis* ovato-lanceolatis, apice dentatis vel integerrimis; *involucris* lanceolatis acutis; *achenis* glabris; *aristis* duobus.

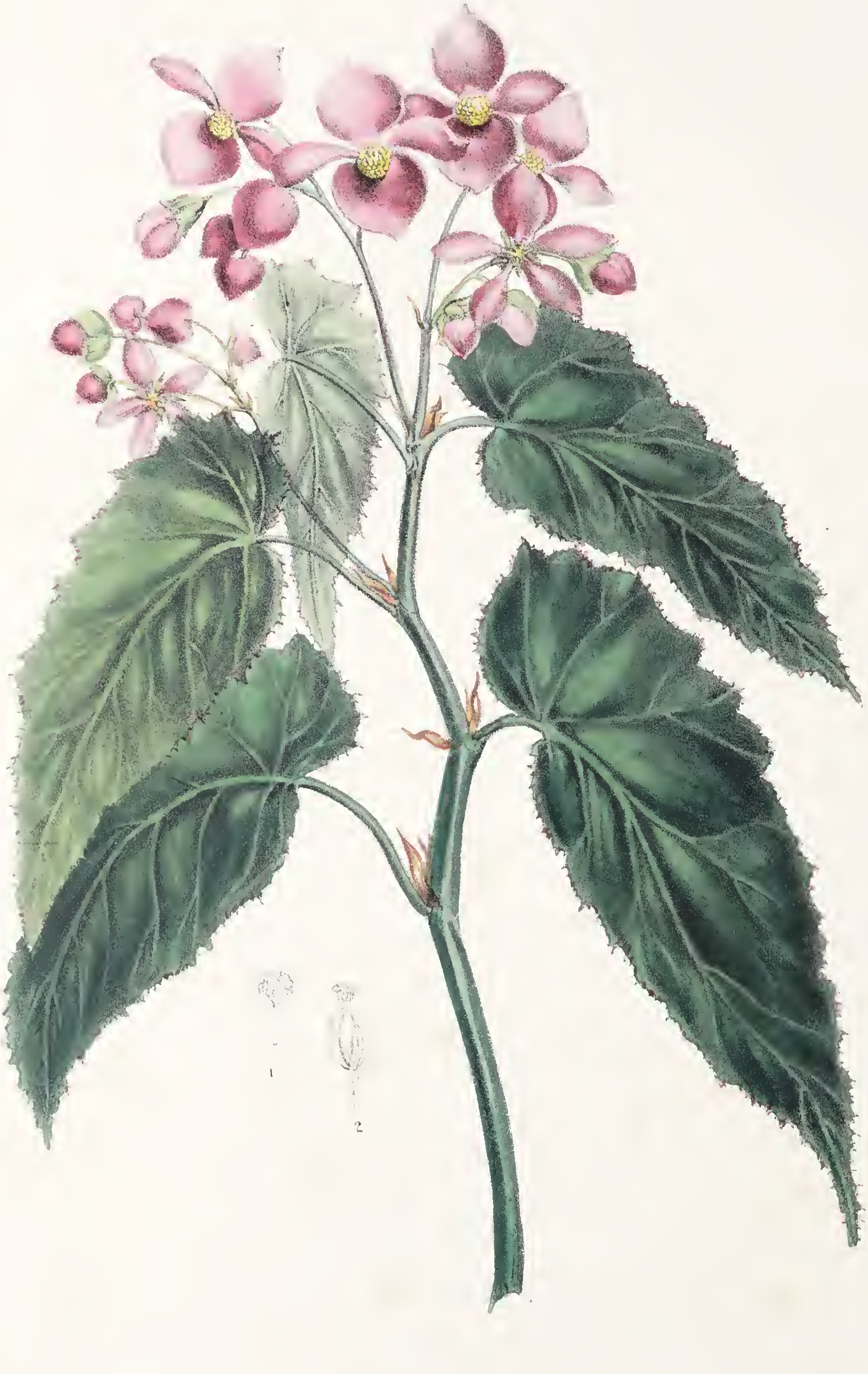
Stem smooth; *leaves* petiolate, divided into double pinnæ divisions, sometimes with a point, margin rough; *petals* ovate-lanceolate, toothed at the apex, or entire; *involucre* lanceolate, acute; *achenia* smooth; *awns* two.

Cosmos diversifolius. Otto. H. Berol.

The plant from which our drawing was taken was sent with other rarities to the Birmingham Botanic Garden, by Mr. Otto, of the Berlin Botanic Garden, in the year 1835. It was then small, and flowered for the first time last year. It is a showy plant, and will consequently be an acquisition to the ornamental flower-garden. It is a free flowerer, commencing in June, and continuing until destroyed by the frost. It grows to the height of about three feet, is much branched, each branch bearing a flower at the apex. Its petals are eight in number, about two inches in length, of a rose, or rather lilac colour. The involucrum contains about as many leaflets as there are petals. The root is tuberous, much resembling that of the dahlia. It is not more hardy than the dahlia, and therefore the roots should be taken up in the autumn, and stowed in a *very* dry cellar, or some other dry place, protected from the frost, or put into light soil, and placed in the greenhouse during the winter, keeping the mould rather dry. It may be increased readily in the spring, either by cuttings of the young shoots subjected to heat, or by dividing the roots, as practised with dahlias, and potting them into small pots, with a mixture of peat and loam. They should be kept in the houses or frames ready for planting out into the open ground in May, for which any common garden soil will be sufficient.

Cosmos is derived from κοσμος (cosmos) beautiful ; diversifolius has reference to the variable shape of the leaves, some being entire, others divided.

Fig. 1, a tubular floret, cut open to show the anthers ; 2, the same, showing the exserted stigmas ; 3, achenium, with style and stigmas, and two barbed awns.



Begonia incarnata.

A. Green delᵗ

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BEGONIA INCARNATA.

(*Flesh-coloured Begonia.*)

LINNEAN SYSTEM.
POLYANDRIA MONŒCIA.

NATURAL ORDER.
BEGONIACEÆ.—(*R. Brown.*

GENERIC CHARACTER.

Begonia (Linn.) masc. *Corolla* 0. *Calyx* polysepala; *sepala* plerumque inæqualia.—Fœm. *Corolla* 0. *Calyx* sepalis 4-9 plerumque inæqualibus. *Styli* 3 bifidi. *Capsula* triquetra, alata, trilocularis, polysperma.

Male flowers. *Corolla* none. *Calyx* many-sepaled; sepals mostly unequal. Female flowers. *Corolla* none. *Calyx* with from 4 to 9 petals, mostly unequal. *Styles* three, divided. *Capsule* three-sided, winged, three-celled, many-seeded.

SPECIFIC CHARACTER.

B. incarnata. Foliosa; *foliis* ovato-lanceolatis, aristato-serratis, basi inæqualiter cordiformibus; floribus cymosis, erectis vel cernuis; *bracteis* membranaceis ovatis; ovariis tri-alatis.

Leafy; *leaves* ovate-lanceolate, bristly-serrated, unequally heart-shaped at the base; *flowers* in cymes, erect or drooping; *bracteas* membranous ovate; seed-vessel three-winged.

Begonia incarnata. Link et Otto. Hort. Berol.

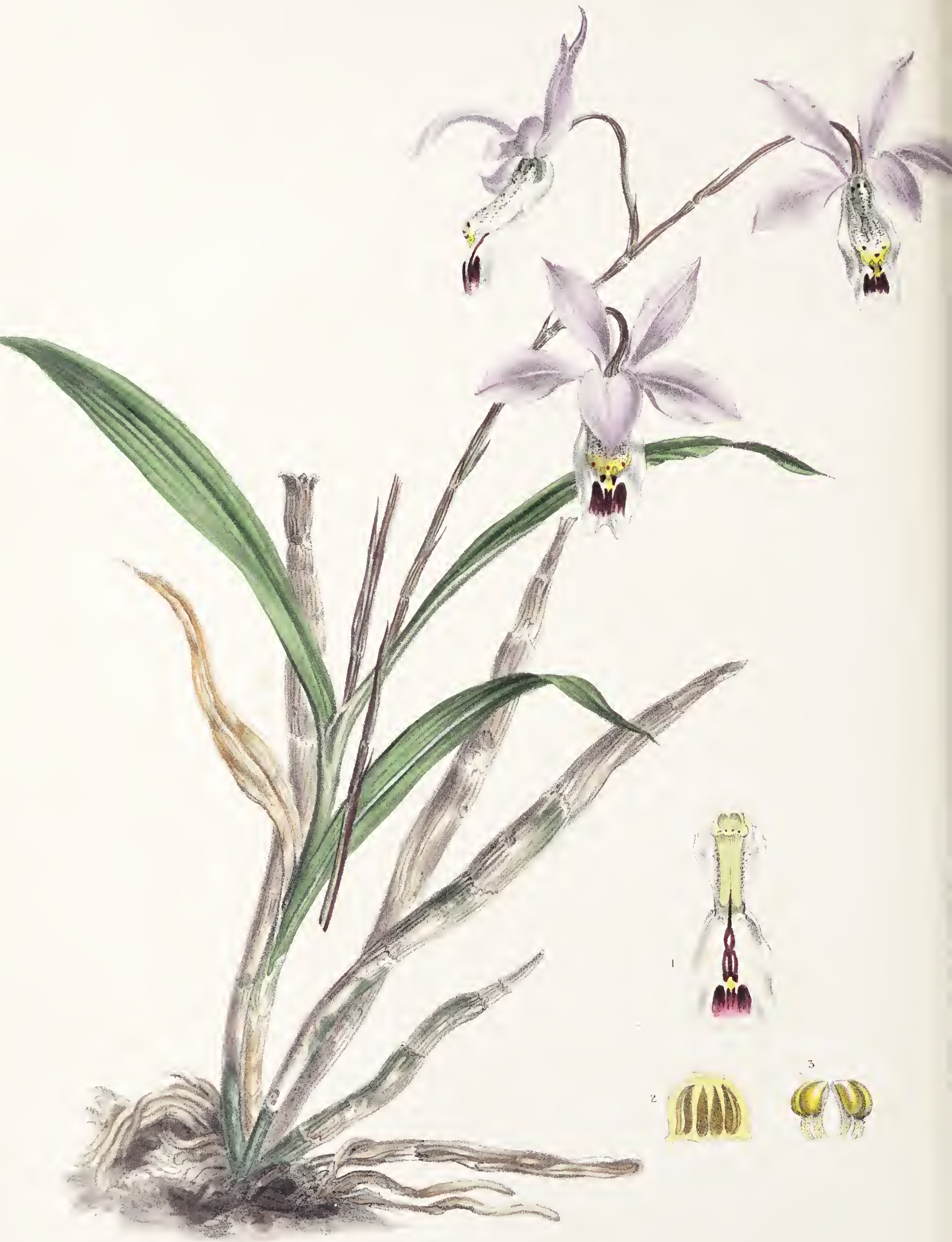
Having dwelt at some length in our first volume on the mode of cultivating Begonias, and made other observations on the genus when describing Begonia grandiflora and diversifolia, we have consequently but little to add on the present occasion.

The species of Begonia cultivated in hothouses are numerous, most of which are of recent introduction. The greater part appear to have been originally raised in the royal garden at Berlin, from whence they have been liberally distributed to the different gardens in England. They are, for the most part, free-flowering plants, and of easy culture. The leaves of several species make a handsome and singular appearance in having their upper surface marked with silvery spots, as in Begonia *argyrostigma*, *picta*, *bulbifera*, and *Martiana*. Some of the other species have the under surface of their leaves of a rich red colour, as Begonia *monoptera*, *Evansiana*, *Fischeri*, and *sanguinea*, the latter of which is truly splendid. Indeed there are few plants more remarkable in their foliage, or more interesting in their general appearance, than Begonias.

Several of the species possess also a peculiar prolific quality, viz. in producing clusters of bulbs or gems in the axils of their leaves, which will germinate when planted, and produce new plants. These bulbs retain their vegetating property nearly as long as seeds; and being very small, can be transmitted by letter to any distance. Mr. Otto has accordingly availed himself of this singular property for their introduction into this country. The species which possess this peculiarity are, *B. monoptera*, *bulbifera*, *Martiana*, *diversifolia*, and *Evansiana*.

The elegant aspect of the present species will at once ensure its admission into every choice collection. Its flowers, which are usually of a flesh-colour (but in well-grown, healthy plants, are occasionally of a rich rose colour), are produced at the extremities of the branches in cymose clusters. These clusters are sometimes erect; but in well-flowered plants they not unfrequently droop in a most graceful manner with the weight of the inflorescence, a circumstance which adds in no small degree to their beauty.

Fig. 1. male flower; 2, female flower, showing the winged seed-vessel.



Barkeria Elegans.

BARKERIA ELEGANS.

(*Elegant Barkeria.*)

LINNEAN SYSTEM.
GYNANDRIA MONANDRIA.

NATURAL ORDER.
ORCHIDACEÆ. § EPIDENDREÆ.—*(Lindl. Nat. Syst. Bot.)*

GENERIC CHARACTER.

Barkeria. *Sepala* patentia vel reflexa, basi subconnata. *Petala* subæqualia vel paulo latiora. *Labellum* liberum, cum columnâ parallelum, limbo indiviso, disco costato. *Columna* elongata, plana vel compressa, sulcata, alata, super labellum incumbens. *Anthera* carnosa, 4 locularis, septorum marginibus membranaceis. *Pollinia* 4, caudiculis totidem ligulatis reflexis, per paria subconnatis.—Herba *epiphyta* Mexicana pseudobulbosa, *foliis* alternatis vaginantibus subcarnosis, *scapo* terminali, racemoso.

Sepals spreading or reflexed, somewhat connate at the base. *Petals* somewhat equal, or a little broader. *Lip* free, parallel with the column, its limb undivided, its disc ribbed. *Column* elongated, flat or compressed, furrowed, winged, resting upon the lip. *Anther* fleshy, 4-celled, the margins of the divisions membranaceous. *Pollen-masses* 4, with as many strap-shaped reflexed caudiculæ, somewhat united in pairs.—A Mexican pseudobulbous *epiphyte*, with alternate sheathing, somewhat fleshy *leaves*, and a terminal racemose *scape*.

Descr.—*Pseudobulbs* long, slender, spindle-shaped, covered with the sheathing bases of former leaves; *leaves* alternate, lanceolate, keeled. *Scape* from twelve to eighteen inches high, slender, terete, clothed with sheathing, closely appressed, acuminated bracteas. *Flowers* cernuous, arranged in a loose raceme. *Sepals* oblong-lanceolate, the upper one somewhat arched, the lateral ones remarkably retroflected so as to present to the view their posterior surface; *petals* somewhat broader, spreading horizontally, which, as well as the sepals, are of the most delicate lilac colour. *Lip* oblong, somewhat deflexed in its anterior portion, slightly apiculate at the apex, and elegantly marked with crimson. *Column* compressed, yellow and furrowed in front, resting closely upon the lip; its posterior surface (which from the pendulous position of the flower is apparently the front view) is beautifully marked with crimson spots, two of which being larger than the rest, and placed like eyes near its apex, give it no slight resemblance to the head of some animal. *Pollen-masses* collateral, flattened on one edge, and somewhat rounded on the other.

For the opportunity of figuring this truly elegant plant, we are indebted to George Barker, Esq. of Springfield, by whom it has been imported, and in whose stove it has recently flowered for the first time in this kingdom. It is with great pleasure, therefore, that we name it in compliment to that gentleman, whose zeal and liberality have been the means of introducing to this country a great variety of new plants, which we hope, through the medium of this work, to make known to the botanical world.

Barkeria, as a new genus, is closely allied to *Epidendrum*, from which it differs chiefly in the complete separation of the lip and column, the peculiar position of the sepals and petals, and the *winged* column. It appears to stand intermediately between *Epidendrum* and *Cattleya*, resembling the *latter* more particularly in its anther-case and pollen-masses.

Little can be said with certainty upon the treatment necessary for the successful cultivation of this plant. The chief point to be attended to in the treatment of this and other newly imported *orchidaceæ* is to use for potting an open, porous mixture that will allow a free passage to water, and yet retain sufficient moisture to encourage the production of fresh roots for the support of the pseudo-bulbs. without being obliged to have recourse to too frequent waterings. For many species of *orchidaceæ*, drainers of broken pots are used with advantage; they should be broken very small (the dust being carefully sifted out), and mixed with sandy, porous peat, using plenty of drainers at the bottoms of the pots. When the peat is not sandy (which is frequently the case), a portion of sand should be added. It may be increased, like other pseudo-bulbous species, by dividing the pseudo-bulbs.

Fig. 1, lip and column; 2, anther-case; 3, pollen-masses.

ON THE CULTIVATION OF CAPE ERICAS OR HEATHS.

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

There are few individuals possessing a greenhouse (however small) that do not attempt to grow some of the Cape Ericas, and too often with but indifferent success. This want of success for the most part arises from an insufficient circulation of air, or from not keeping the soil in the pots in a medium state of moisture, the roots being apt to perish if kept for a short time *too moist*, and if allowed to get too dry, the young fibrous roots will share the same fate, more particularly if the pots are exposed to the direct rays of the sun.

A more economical and surer way to grow them is in the cold frame set upon a dry bottom plunged in porous sand. Here they may remain both *summer and winter*. The lights in summer should be kept off during dull or cloudy weather *both night and day*, but during clear sunshine should be only uncovered from *four in the afternoon until nine the next morning*, taking care in the middle of the day to have the sashes on, and to give plenty of air. In winter the sashes must be drawn off in mild dry weather *daily*, and covered with mats, or some other covering during frosty nights, and in very severe weather. When there is no sunshine they will also require sometimes to be kept on, and some dry litter or other loose material put around the frame. The advantages derived from plunging them in the sand are, that the frost never reaches further than the surface of the soil; that they will want *little or no water* from November until the middle of February, and that even during summer they will not require water near so often as if they stood upon the stage of the greenhouse, or out of doors, along with the greenhouse plants. To keep the plants in a healthy growing state they should be repotted into larger pots as often as the roots get matted around the sides of the pots in good sandy peat, which should be more rough at each successive shifting, and the balls gradually raised in a conical form above the surface of the pots. The tops of the young shoots should also be occasionally pinched off to force them to send out side shoots, so as to make them neat bushy plants. As they come into flower, they may be removed into the greenhouse, and returned to the frame when they have done flowering.

An economical and still better protection for ericas is a pit of the length and breadth suited to the quantity it is intended to protect, which like the frame, ought to be upon a dry soil, or made perfectly so by draining. The bottom should be sunk from eighteen inches to two feet below the surface, and should have a cavity of about a foot from the bottom. This may be done by raising piers, and covering them with large slates or tiles; the outer walls should also be built *hollow*, which both keeps it dry and warm in winter.

The management as to air, watering, plunging, &c., will be the same as recommended for the frame.

A great improvement in the covering with mats, both for the frame and the pit, is to have wire or iron rods upon the sashes, so as to keep the mats *at least* four inches above the glass. *One* mat at that distance will keep out cold more effectually than *four* laid upon the surface of the glass. The pit, from having the walls hollow, will not require any litter around the walls in the winter, and consequently will be more neat in appearance than a frame. A pit of the above description will do equally well for Camellias, and for all hard-wooded New Holland plants.

NOTICES OF NEW WORKS ON BOTANY, HORTICULTURE, &c.

We congratulate our botanical readers upon the appearance of the "sixth volume of De Candolle's Prodromus," a work upon which the learned and indefatigable author has been engaged for many years. The importance of the present and preceding volume, and the anxiety with which they had long been expected by the botanical world, will no doubt justify us in offering the following brief remarks. Of all the various orders into which the vegetable kingdom has been divided, one of the most natural, and at the same time the most extensive, is the *compositæ*. Indeed the immense number of species which it contains has rendered its subdivision into sections not only desirable but absolutely necessary, This has been attempted by many distinguished botanists, but more especially by Cassini, Kunth, and in this country by Dr. Brown, in an admirable paper in the twelfth volume of the "Transactions of the Linnean Society." Yet, notwithstanding the attention which has formerly been bestowed upon it by the botanists above named, and more recently by Lessing, in his excellent Synopsis, still the arrangement of the *compositæ* has been considered to be far from satisfactory, and the genera and synonyms in a state of great confusion up to the present time. To review the whole order, and to extricate it from difficulties so embarrassing, was apparently reserved for the master-mind of De Candolle, and most ably has he executed the task. In short, we feel assured that the fifth and sixth volumes of his Prodromus (which are devoted almost entirely to the *compositæ*) cannot fail to be regarded as models of patient labour, philosophical investigation, and accurate discrimination.

Mr. Bateman announces a second number of his splendid work on the "Orchidaceæ of Mexico and Guatemala," to appear in the course of the present month.

Dr. Lindley also announces a second number of his splendid "Sertum Orchidaceum," to be published in April.

ON THE CULTIVATION OF RASPBERRIES.

BY A PRACTICAL GARDENER.

The usual method of managing raspberries is by staking each bundle of shoots proceeding from one root, and tying the shoots up close to the stakes, allowing the young shoots to arise up all around the bearing wood. This plan is prejudicial, inasmuch as it prevents the fruit from having the full advantage of the sun, and the free circulation of air; the consequence of which is that the fruit is never large or fine-flavoured.

An improved method, which has been long practised in a few gardens with excellent success, but not so generally as it ought to be, is to cut out *all* the weakest shoots in winter, reducing the number for bearing upon each plant to about six rods, and in place of staking them, so to dispose of them as to form an arch, by beginning to plat one shoot from each together, and then platting one from each alternately upon the first two until the whole are disposed of, by which means they will be so firm that no stakes will be required. They should be planted six feet apart, and the young plants left to grow upright. By this treatment the young canes will send out their bearing branches from each plant freely in the space between; the trained canes will be freely exposed to the influence of sun and air; the fruit will be easily gathered, without having to put the young canes aside as in the old method; and, moreover, they have a more pleasing appearance.

A trial for one season in the manner recommended will not fail to make the operator a convert to this plan.

There is a variety of the raspberry known as the double-bearing, a few plants of which ought to be grown for producing fruit in the autumn, which, if properly managed, will continue bearing fruit until Christmas if the weather be mild.

This sort, which may be grown like the others, produces fruit upon the old wood at the ordinary season, and in the autumn from the extremity of the shoots. However, when treated in this way, the crop is very uncertain and precarious. To make the most of the autumn crop, the canes ought all to be cut *clean off* at the winter dressing, and as the young shoots advance in growth, five or six only of the strongest should be selected for autumn fruiting (all the others being removed), by which means an abundant autumnal crop may be ensured. The best soil for raspberries is a deep rich loam, with an abundant supply of manure every year, or at least every other year.

ON THE BEST MEANS OF OBTAINING AN AUTUMN CROP OF STRAWBERRIES.

Small autumn crops of strawberries may be obtained until Christmas, by turning out the plants that have been forced early in the hothouses into a sheltered situation, in a rich soil, keeping them free from runners, and cutting off the flower trusses as they appear until the end of August, after which time they may be allowed to mature the fruit. If the autumn prove very wet, some means ought to be taken to keep the fruit from the soil, such as clean straw, otherwise many will rot before they are perfectly ripened. The best variety for such a crop is the roseberry, and which is also one of the best for the earliest forcing.

J. W.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

FABACEÆ AND PAPILIONACEÆ. Lindl.

Chorozema cordatum. Lindl. Mr. Mangle's Chorozema. *Bot. Reg.* N. S. t. 10. This is a very distinct and handsome species, raised by R. Mangles, Esq., from seed received from the Swan River Colony, and through whose liberality it has been extensively distributed. It has every appearance of being an abundant flowerer, and is easily propagated by cuttings taken at any season of the year. *Bot. Reg.*

MYRTACEÆ. R. Brown.

Callistemon microstachyum. Lindl. Small-spiked Callistemon. *Bot. Reg.* N. S. t. 7. A new species, which flowered for the first time in this country in the garden of W. Harrison, Esq., of Cheshunt, in March, 1837, and who in the time of its bloom exhibited it at one of the meetings of the Horticultural Society, where it was awarded one of the Society's medals.

Propagated by cuttings, which should be taken of young shoots, and if possible of young plants. *Bot. Reg.*

PASSIFLOREÆ. Juss.

Passiflora nigelliflora. Tweedie's Nigella-flowered Passion-flower. *Bot. Mag.* t. 3636. This species is plentiful at St. Jago de Estero, on the Rio Dolcè, at which place it was discovered by Mr. Tweedie, returning from Mendoza to Tucuma in the year 1835. It is allied to *P. gossipiifolia, P. hybiscifolia, P. fœtida,* and *P. ciliata.* It flowered in the Glasgow Botanic Garden in September last. *Bot. Mag.*

Passiflora Tucumanensis. Hook. Large-stipuled Passion Flower. *Bot. Mag.* t. 3636. This species was discovered by Mr. Tweedie, at St. Jago and Tucuman, at the eastern foot of the Cordillera of Chili. It is of free growth, and flowered copiously the second year in the stove of the Glasgow Botanic Garden in July.

LOASEÆ. Juss.

Loasa lateritia. Hook. Red-flowered Loasa. *Bot. Mag.* t. 3632. This is a very beautiful and distinct species of Loasa, discovered by Mr. Tweedie in Tucuman, from whence seeds were sent to the Glasgow Botanic Garden. It is an annual in its native country, but the seedlings Mr. Murray raised in the year 1836 stood in the stove through the winter, and flowered the following May. It therefore may be regarded as a biennial. *Bot. Mag.*

CACTEÆ. D. C.

Mammillaria Lehmanni. Hort. Berol. Lehman's Mammillaria. *Bot. Mag.* t. 3634. *Syn. M. Octacantha et leucacantha, D. C. Rev.* p. 113, *Mem.* p. 11. This species was formerly in the rich collection of Mr. Hutchins, but is now the property of Mr. Mackie, who communicated to Sir W. J. Hooker the drawing figured. It is a peculiar species, from having at the axils of the mammillæ black spots, which in the hot weather discharge a black viscid juice. *Bot. Mag.*

COMPOSITÆ. Vaill.

Morna nivea. Lindl. Snowy-white Morna. *Bot. Reg.* N. S. t. 9. A half-hardy annual, raised from seeds by R. Mangles, Esq., who received them from the Swan River. It differs from Nitida not only in the scales of the flower heads being white instead of yellow, but also in their being quite entire, and from the unfading brightness of the flowers, which retain their shape and colour if carefully prepared, and thus form a charming addition to the everlasting flowers already known. *Bot. Reg.*

CARICEÆ.

Carica citriformis. Jacq. Small Citron-fruited Papaw. *Bot. Mag.* t. 3633. This specimen was communicated from the stove of Charles Horsfall, Esq., Liverpool, in 1835. That gentleman procured it from the curator of the Botanic Garden, Rotterdam, as the *C. monoica, Desf.* but it differs from that species, the latter having deeply sulcated and pointed fruit. The seeds vegetate speedily, and soon come to perfection, specimens at the Botanic Garden, Glasgow, and Woburn, having borne fruit the same year. *Bot. Mag.*

EUPHORBIACEÆ.

Euphorbia Veneta. Willd. Venetian Euphorbia. *Bot. Reg.* N. S. t. 6. A half-hardy, half-shrubby, evergreen plant, inhabiting the vicinity of Venice, Nice, Genoa, Dalmatia, Friuli, and other places in the same part of Europe. It is allied to Characias.

The specimen was drawn from a plant in the collection of the Hon. W. F. Strangways. *Bot. Reg.*

MONOCOTYLEDONES.

LILIACEÆ.

Thysanotus proliferus. Lind. Proliferous Thysanotus. *Bot. Reg.* N. S. t. 8. Another beautiful plant raised in the garden of R. Mangles. Esq., of

Sunning Hill, from seeds received from the Swan River Colony. It is not very showy, but the fringe on the petals give it a beautiful and singular appearance. It is a greenhouse perennial, growing from twelve to eighteen inches high, and requiring a strong rich loamy soil. *Bot. Reg.*

ORCHIDACEÆ § MALAXIDEÆ.

CIRRHOPETALUM THOUARSII. Lindl. Insular Cirrhopetalum. *Bot. Reg.* N. S. t. 11. A singular and extensively diffused epiphyte, specimens of which have been received from the Society Islands, Java, Isles of France and Madagascar; and Mr. Cumming has lately sent it from Manilla to Messrs. Loddiges, with whom it flowered last July. *Bot. Reg.*

§ EPIDENDREÆ.

EPIDENDRUM FLORIBUNDUM. Humb. et Kunth. Many-flowered Epidendrum. *Bot. Mag.* t. 3637. An epidendrum of no great beauty, communicated by James Bateman, Esq., who obtained the figure from a specimen in the collection of Messrs. Loddiges. The flowers were considerably larger than the wild specimens gathered on the Amazon River by Dr. Poppeg. It continues long in flower, and has a neat and pleasing appearance. It was also collected by Mr. Henchman in Demerara in 1834, a specimen of which flowered in the rich stove of Messrs. Lowe, of the Clapton Nursery, 1837. *Bot. Mag.*

MONTHLY SCRAPS.

BY AN AMATEUR.

THE LONDON COLLECTIONS.—Notwithstanding the apparent evidence to the contrary, afforded in the fair display of the Horticultural Society on their last day, there is little, nay comparatively nothing, of interest to be seen at the present moment in the various nurseries round London, and scarcely more in the collections of the most distinguished amateurs. We passed the other day through the extensive conservatories of Messrs. Loddiges, of Hackney, but found no novelty, nothing of peculiar interest. Even the orchideous-house, generally an attraction, is now dormant. But a visit to this establishment is never thrown away. Can it be accounted no gratification to stroll through the vast palm-house? At this unusually inclement season, to step suddenly from all the rigours of the frost, into that forest of tropical foliage, vegetating in all the luxuriance it could display in its own glowing clime, is surely an exciting transition, well worthy of a pilgrimage to Hackney.

At Messrs. Lowes', of Clapton, the absence of novelty, or any beautiful plant now in bloom, is equally felt. Their last new specimen of the orchidaceæ was drawn for Mr. Bateman's new work, upon the Mexican *dynasty* of that interesting tribe. During this severe weather the glass is almost entirely covered with straw and matting, and all looks dark and dreary in this establishment, which is one that sends its plants to all parts of Europe; indeed the extensive gardens of

Lieutenant Weber are, we believe, almost entirely indebted to this collection for their scarce species of Cape and New Holland plants.

Many other gardens which we have seen are not more interesting at this time. We have not been to Messrs. Rollisons, Messrs. Chandlers, and some others, but propose next month taking a more extensive round; and we trust at that more advanced period of the season to meet with much worthy of description.

The Frost.—The severe frost, unequalled for severity or duration since the well-remembered winter of 1813-14, has done much more damage than has been recorded in the newspapers, with all their fearful catalogue of dogs and cats frozen to death. The damage sustained in the various nurseries has been immense. Even our hardy and acclimated evergreens, the laurel, laurustinus, Portugal laurel, &c. &c., have been killed in great numbers, particularly the young plants. In some nurseries nearly *all* the young plants are destroyed, and many private gardens have lost their full-grown shrubs; the fine green masses of which will be missed in the shrubberies for many years. In Paris the cold has been still more intense, but has not done much damage among the species above mentioned, as their cultivation is not attempted. We are accustomed to look upon France, with its vines and olives, as a generally milder climate than our own; but the fact is, that the northern division, including country far to the south of Paris, though hotter in summer, is colder in winter than any part of England; so much so, that the common evergreens, which form the life and beauty of our suburban gardens through many dreary months of the year, will not there survive a single season without protection. This fact in some degree accounts for the naked and cheerless appearance of the suburban residences of the Parisians, when compared to the villas round London. Another cause is perhaps the absence of turf; our beautiful plots of green, and our sloping and undulating lawns, cannot be cultivated there, for they will not succeed. It has failed wherever attempted, as may be easily verified by an inspection of the poor mossy, rotten, patches which are the substitutes for grass plots and lawns at St. Cloud and Versailles; so that the *damp, misty, foggy,* atmosphere that our neighbours rail at so much, has some advantages after all. We think we could not give up our verdant meadows, which are scarcely ever to be met with in the greater portion of France, for the finest vineyards on the banks of the Rhone or the Garonne. Charles II. used to say that a gentleman might walk out more days in the year in England than in any other country of Europe, which in the main is true; yet we attach little value to the authority of the *bel esprit* king; for by his own experience, he knew no other climate save that of Breda, and was by no means the travelled gentleman his remark would lead us to infer.

If however we are still discontented with our climate, let us look a little further north, to St. Petersburgh for instance, where two *greenhouse rarities* shown to Dr. Walsh, consisted in a little pot of ivy and a ditto of holly, a little bush about the size of a sixpenny myrtle.

CALENDAR OF GARDENING OPERATIONS FOR MARCH.

Shift Pelargoniums into their flowering pots, for which the soil should be a rich porous one for most sorts, and for the more delicate, a mixture of loam, peat, and sand, with plenty of drainers.

After potting, they ought to be placed on the stages rather thin, and as near the glass as possible, they should also be turned round at least once a week to prevent them growing towards the front of the houses.

Dahlias must be put into heat, to cause them to push shoots, either for dividing, or for making cuttings.

Many plants will now require shifting in the pothouse, greenhouse, and cold frame.

Shift hardy alpines in pots, that commence growing early, particularly *Pinguiculas*, which, with this genus, must be done before vegetation commences, otherwise they are almost sure to perish.

Pot bulbs of Tigridias, Cypellas, &c., to forward for transplanting into the open ground in May or June.

Divide the more robust herbaceous plants, and if an increase is not wanted, reduce them in size. Asters, Helianthuses, Veronicas, or the more delicate sorts of these genuses, should not be disturbed until the beginning of April (which indeed is the best time for dividing all sorts), but where the collection is extensive it is better to get the work forward.

Sow seeds of Balsams, Cockscombs, Globes, Capsicums, and other tender annuals, in pots, and plunge them into a warm hotbed; also sow half-hardy annuals upon a gentle hotbed, covering with mats during the night, and occasionally during the day in severe weather. The bed may be hooped over with willow or hazel rods, to keep the mats off the plants. They will be fit for transplanting out in May and June.

Make the first general sowing of hardy annuals this month, others for succession next month.

This is a good season for putting in cuttings of Verbena Tweediana, Incisa, Chamædrifolia, Pulchella, &c., to make plants for turning out into beds in the open ground in May or June. The cuttings ought to be taken from the youngest shoots, and if placed in a bottom heat will frequently take root in about a week. The cuttings should be struck in sand, or light sandy soil, and transplanted either single, or several round the sides of the pot.

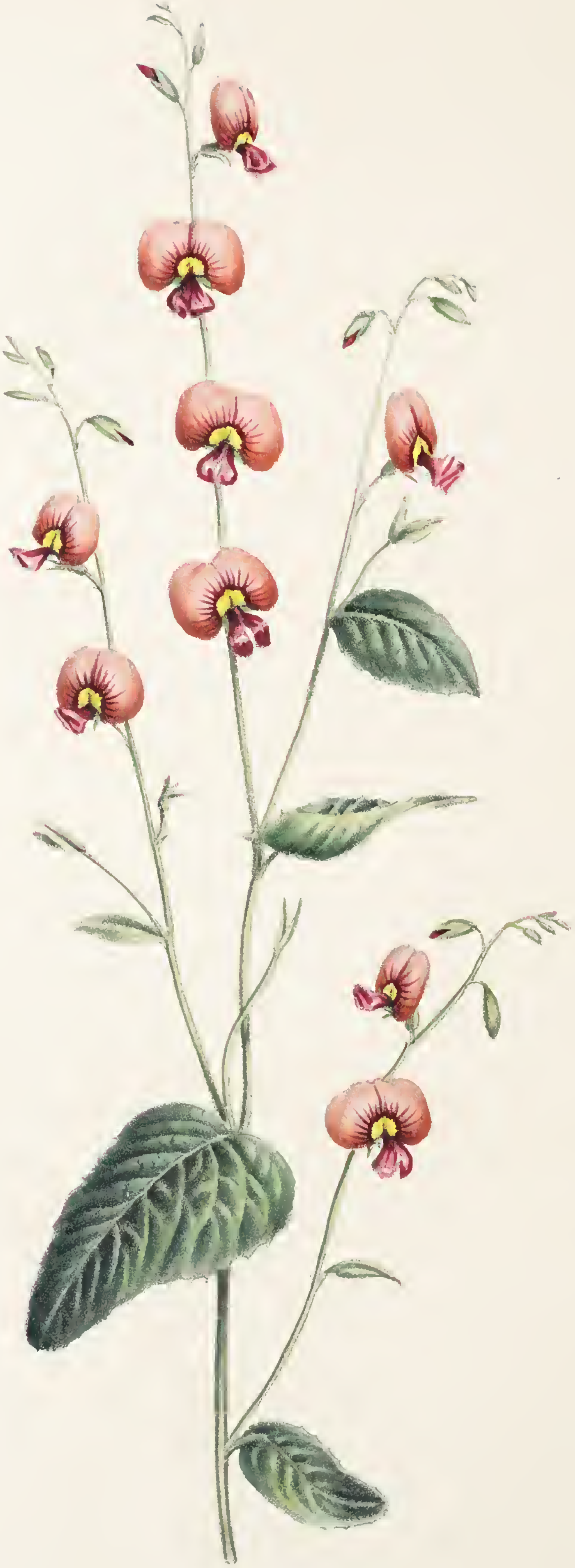
Salvia fulgens may at this time be propagated by cuttings, for transplanting into the borders in May or June.

Lobelia propinqua, speciosa, fulgens, splendens, and cardinalis, may be divided and planted into single pots, to forward them previous to their removal into the open ground.

All *Calceolarias*, whether suffruticose or herbaceous, strike readily from cuttings until the latter end of April, after which time they are very tardy in rooting.

Cover sea kale in order to keep up a succession to that previously covered in *February*.

No. 50



Chorozema cordata.

nes del.

J. Graf. Printer to her

CHOROZEMA CORDATUM.

(*Heart-leaved Chorozema.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DECANDRIA MONOGYNIA.	FABACEÆ.—(*Lindl.*) LEGUMINOSÆ.—(*Juss.*)

GENERIC CHARACTER.

Chorozema (Labill.) *Calyx* semi 5-fidus, bilabiatus, labio superiore bifido, inferiore 3-partito. *Corolla* carinâ ventricosâ, alis breviore. *Stylus* brevis, uncinatus. *Stigma* obliquum, obtusum. *Legumen* ventricosum, 1-loculare, polyspermum, sessile, aut subsessile.—Suffrutices *Australasici*. *Folia* alterna, simplicia, sinuato-dentata, aut integra.—(*Decand. Prod.* vol. ii. p. 102.)

Calyx half 5-cleft, 2-lipped, the upper lip bifid, the lower lip 3-parted. *Corolla* with an inflated keel, shorter than the wings. *Style* short, hooked. *Stigma* oblique, obtuse. *Pod* inflated, 1-celled, many seeded, sessile, or nearly so.—Shrubby *Australasian* plants. *Leaves* alternate, simple, sinuate, toothed, or entire.

SPECIFIC CHARACTER.

C. cordatum; *foliis* subsessilibus, cordatis, ovato-oblongis, obtusis, æqualiter spinuloso-dentatis, glabris; *racemis* terminalibus axillaribusque, laxis, nutantibus, paucifloris; *calycis* pubescentis dentibus tubo æqualibus. (*Lindl. Bot. Reg.* fol. 10, N. S.)

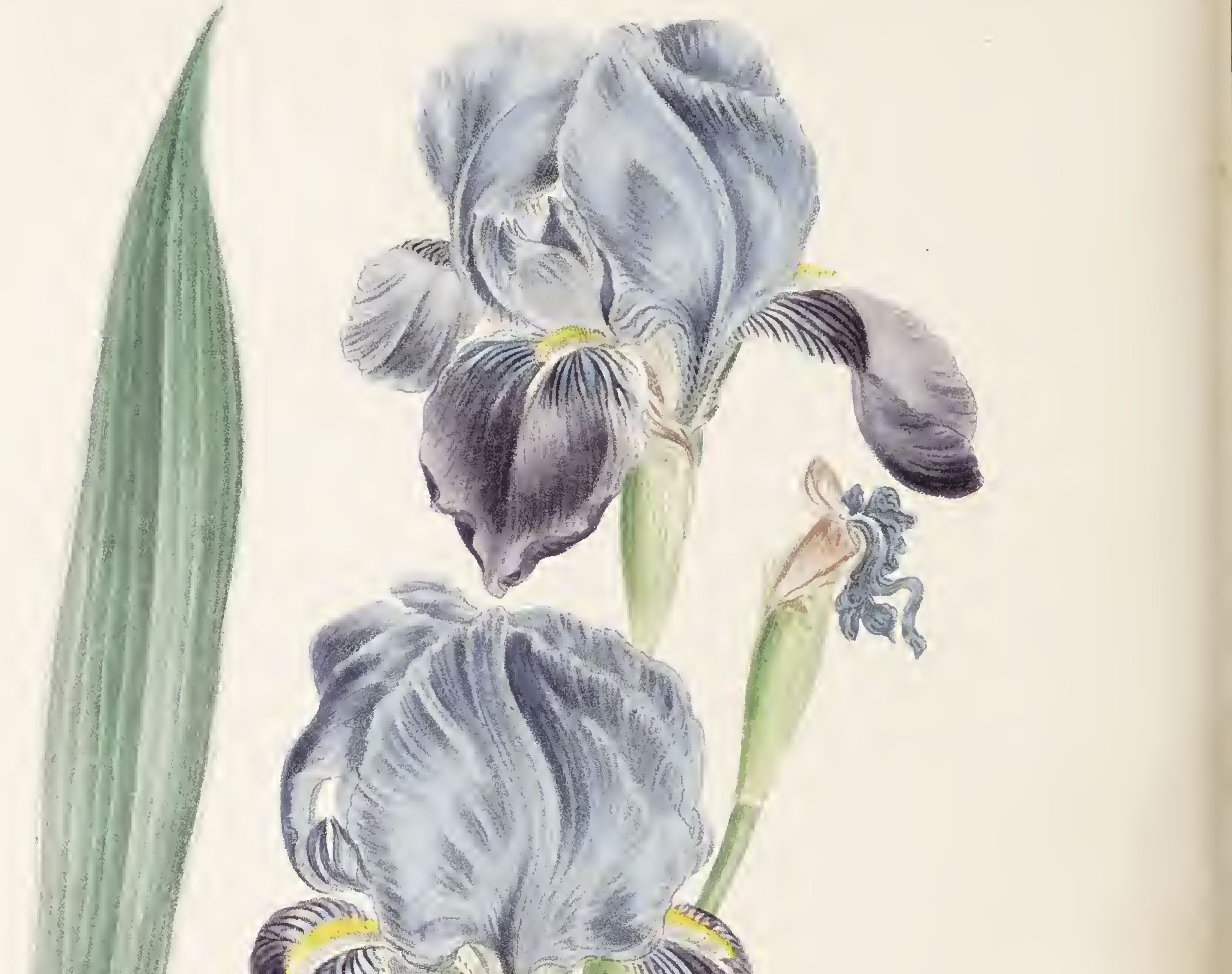
Leaves somewhat sessile, heart-shaped, ovate-oblong, obtuse, regularly and spinulosely-toothed, smooth; *racemes* terminal and axillary, lax, nodding, few-flowered; *teeth* of the downy calyx equal to the tube.

Descr.—A slender, erect *shrub*, smooth, and of a lively shining green. *Branches* slender, spreading. *Leaves* reticulated, with very short hairs sparingly scattered upon the under surface, but principally upon the petiole and veins. *Peduncles* clothed with numerous, short, closely-appressed hairs. *Bracteas* small, lanceolate, which, as well as the calyx and two minute, opposite *bracteolæ* embracing its base, are covered with short hairs. *Standard* 2-lobed, of a rich vermilion, marked at the base with bright yellow; *wings* and *keel* purple. *Legume* pubescent.

For an opportunity of figuring this new and interesting species of Chorozema we are indebted to Messrs. Lowe of Clapton, in whose nursery our drawing has been recently made, and from whom we have received, through the kindness of Mr. Henchman, the following particulars of its introduction:—" It was raised in 1835, by Robert Mangles, Esq., of Sunning Hill, from seeds collected at the Swan River colony. The plant from which your figure was taken was liberally presented to us by that gentleman in November, 1836. It was then a mere cutting, just rooted; and is now, in little more than sixteen months, a handsome, bushy plant, about three feet in height, and has produced, this spring, at least fifty racemes of bloom. Its graceful habit, fine foliage, and luxuriant growth, will render it a general favourite in the greenhouse."

The genus *Chorozema* was so named by M. Labillardière when on his voyage in search of La Peyrouse; and the circumstances under which he was prompted to construct the word (which are at the same time curious as well as interesting) are thus explained by the late Sir J. E. Smith, in the "Transactions of the Linnean Society:"—"M. Labillardière originally discovered this plant (*Chorozema ilicifolium*, the species first discovered, and which was introduced in 1803) on the southern coast of New Holland, at the foot of the mountains, in a loamy soil, near a spot where, after being tantalized with finding many salt springs, his party had just met with an ample supply of fresh water. This welcome refreshment, of which he speaks feelingly in his book, seems to have suggested a name for his plant, which he had properly determined to constitute a new genus. He called it Chorozema, evidently, as I presume, from χορος a dance, or joyful assembly, and ζεμα a drink, in allusion to the circumstance just mentioned. This occasioned me to take the liberty of changing the gender of the name, which he had made feminine; and I have taken the further liberty of changing the *i* for an *o*, an alteration which the derivation seems to authorize, and indeed to render indispensable."

It is propagated without difficulty; cuttings of the young wood inserted in sand under a bell-glass strike root readily.



Iris deflexa.

Mills del.

J. Graf Printer to her Majesty.

IRIS DEFLEXA.

(*Deflexed Iris.*)

LINNEAN SYSTEM.	NATURAL ORDER.
TRIANDRIA MONOGYNIA.	IRIDACEÆ.

GENERIC CHARACTER.

Iris (Linn.) *Corolla* sexpartita, laciniis alternis reflexis, alternis conniventibus. *Stylus* 0. *Stigmata* tria petaliformia. (*Roemer et Schultes*, *Syst. Veget.* vol. i. p. 343.)

Corolla six-parted, divisions alternate, one half reflexed, the others connivent. *Style* none. *Stigmas* three, having the appearance of petals.

SPECIFIC CHARACTER.

I. Deflexa; barbata; *scapo* flexuoso, declinato, multifloro, foliis longiore; *foliis* ensiformibus, apice falcatis, marginatis, glaucis; *floribus inferioribus* pedunculatis; *spathis* viridibus; *germinibus* trigonis.

Bearded; *flower-stem* flexuous, declined, many-flowered, longer than the leaves; *leaves* sword-shaped, curved at the apex, margined, glaucous; *lower flowers* pedunculated; *sheaths* green; *germen* three-sided.

Descr.—*Rhizoma* thick; *leaves* of a pleasing glaucous green colour, from a foot to eighteen inches high, and from half an inch to an inch and a half broad, curved in a falcate manner more or less at the apex. *Scape* issuing from the centre of the leaves, flexuous, and declined, bearing from three to five flowers, the upper one of which is sessile, the lower ones longly pedunculate, having the peduncles curved inwards, which gives the flowers on the scape a secund appearance. The *sheaths* are of unequal sizes, decreasing in size from the bottom to the top. The three exterior *petals* are reflexed and tongue-shaped, of a lilac colour, or perhaps more of a violet purple intersected with white streaks, which have a delicate appearance if viewed under the petaloid stigma. The *beard* is yellow. The three interior *petals* are alternate with the exterior ones, roundish oval in form, and connivent; their colour is darker than the exterior ones, and beautifully streaked with brown at the base. The *stigma* partakes more or less of the colour of the interior petals. The divisions of the *stigma* are jagged and incurved. The *pollen* is greenish. Tube of flowers longer than the germen; *germen* three-sided.

This is a very elegant species of Iris, and when in perfection, diffuses a grateful perfume much resembling the sweetness of the rose. It was brought from the East in the year 1833, by —— Boultbee, Esq., of Springfield, near Knowle, through whose kindness it was presented to the Birmingham Botanic Garden.

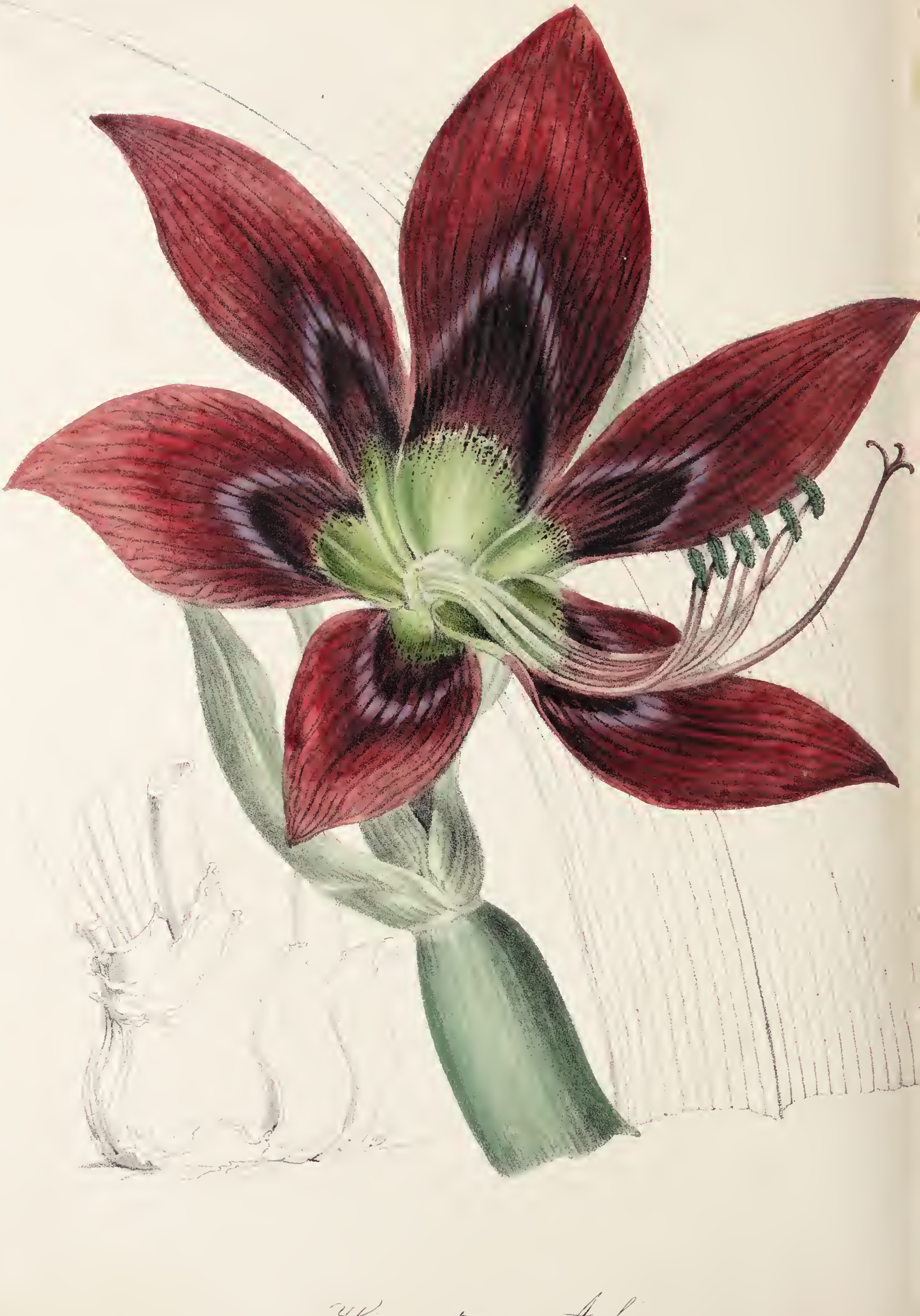
It was received with the name *Iris Nepalensis;* but from that species we think it certainly distinct.

A fine-flowered specimen was sent to Sir W. J. Hooker about eighteen months ago, for publication in the Botanical Magazine; and we have since been informed by that learned professor that he has considered it so near to *Iris subbiflora*, *Bot. Mag.* t. 1130, as to doubt if it be specifically distinct from that plant; which circumstance has caused its publication to be delayed.

We feel assured that Sir W. J. Hooker will excuse our differing from him in opinion, as after the most careful examination we believe our plant to be clearly distinct from *Iris subbiflora.* It differs from that species, first, in having the scape flexuous, and deflexed, and bearing four and sometimes five flowers (never less than three), and by having a three-sided germen. Furthermore, its constitution is so very tender, that it requires a stove heat, or that of a warm greenhouse.

Four or five plants of this species have flowered in the Birmingham Botanic Garden, propagated from the parent plant, which have possessed all the peculiarities above mentioned.

The treatment it requires is either a cool stove or a warm greenhouse; but Mr. Cameron, the indefatigable curator of the above establishment, says he has never succeeded with it out of doors. It should be potted in loam and peat, and may be increased by dividing just before it begins to grow, which generally takes place in September; and during the winter months it usually puts forth its flowers.



Hippeastrum Aulicum.

Green del.

J Graf, Printer to her Majesty

HIPPEASTRUM AULICUM.

(*Princely Horse-star.*)

LINNEAN SYSTEM. | NATURAL ORDER.
HEXANDRIA MONOGYNIA. | AMARYLLIDACEÆ.

GENERIC CHARACTER.

Hippeastrum (Herb.) *Perianthium* pedunculatum, declinatum, tubo infra obliquè abbreviato; *sepalo* summo latiore, *petalo* imo angustiore; *membrana faucialis* ubi manifesta, non annularis (infra scil. imperfecta); *filamenta* resurgenter declinata tubo gradatim inserta, e petalinis imo breviore profundiùs, e sepalinis summo longiore altiùs inserto; *antheræ* a tertiâ parte superiore pendulæ; *stylus* resurgenter declinatus. *Stigma* trifidum, aut trigonum.—(*Herbert Amaryllidaceæ*, p. 71.)

Perianth pedunculate, declined, with the tube obliquely abbreviated underneath; the upper sepal wider, the lower petal narrower; *faucial membrane* when manifested, defective on the lower side (not annular); *filaments* declined, recurved, inserted in the tube with gradations; the lower petaline shorter and inserted lower, the upper sepaline longer and inserted higher; *anthers* pendulous from their upper third portion; *style* declined, recurved. *Stigma* trifid, or triangular.

SPECIFIC CHARACTER.

H. Aulicum; bi vel triflorum ringens; *foliis* nitidis; *corollis* nutantibus, tubi coronâ firmâ, coloratâ, obsoletè denticulatâ; laciniis ovato-lanceolatis, acutis; exterioribus angustioribus, imâ infernè involutâ. *Staminibus* inclusis.

Two or three-flowered; *leaves* shining; *flowers* drooping; crown of the tube firm, coloured, and obscurely toothed; divisions broadly lanceolate, acute; the exterior ones narrower, the lower one underneath curved inwards embracing the filaments. *Stamens* not projecting beyond the petals.

Hippeastrum Aulicum.—*Herbert*, *Amaryllidaceæ*, p. 153.
Amaryllis Aulica.—*Ker.*, *Bot. Reg.* t. 444.
Journal of Science and the Arts, vol. ii. p. 353.

This is one of the most splendid species of the whole natural order Amaryllidaceæ, and richly merits its specific name *Aulicum*, which signifies courtly or princely. Indeed its brilliance is dazzling; and if compared with other plants of a similar colour, will appear to greater advantage.

The plate in the Botanical Register of Mr. Ker before quoted is very indifferent, being badly drawn; and so miserably coloured, that it gives not the slightest idea of its actual magnificence. However, the uncoloured part of the lower petal embracing the filaments is well delineated.

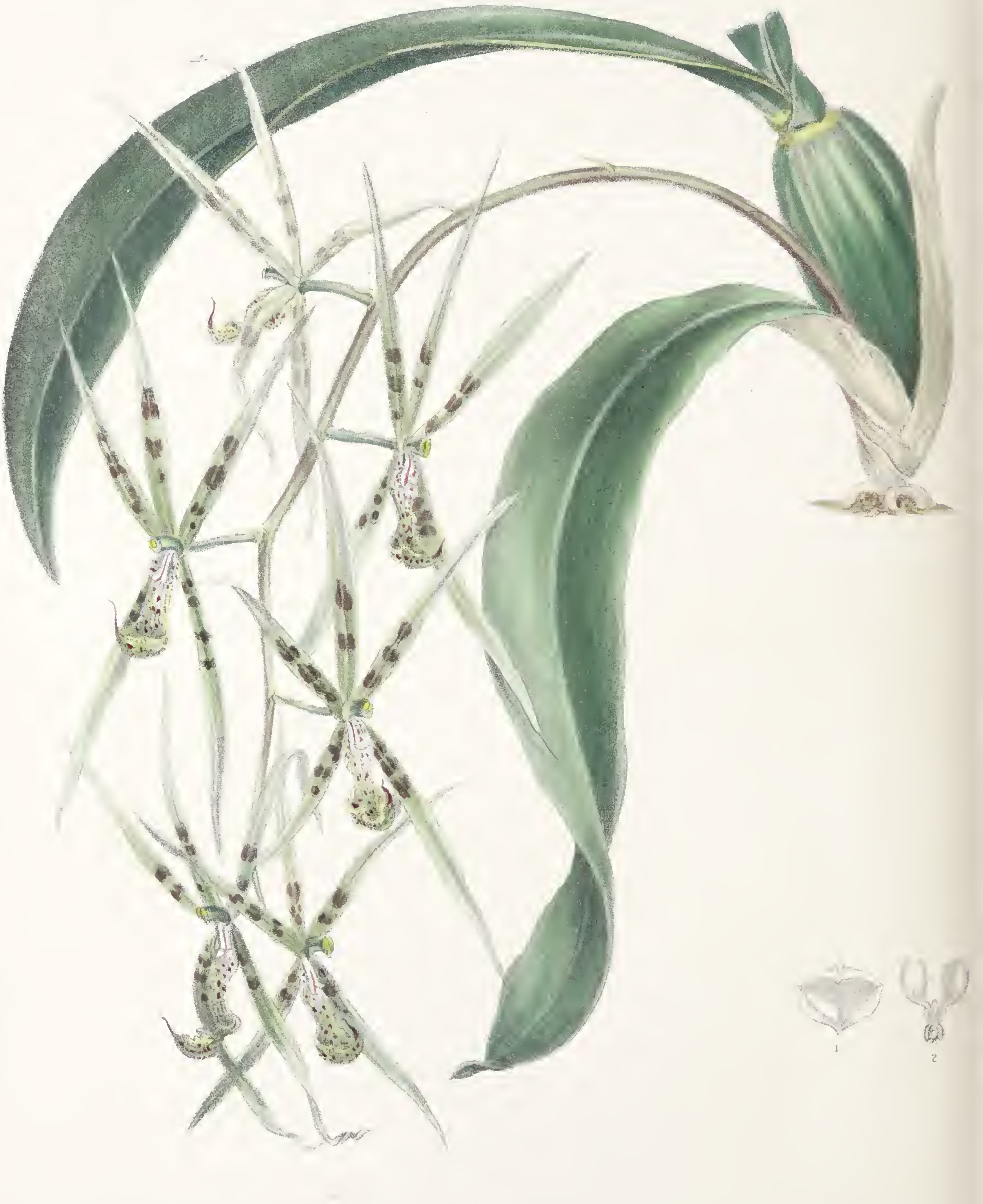
It is a native of Brazil, and was introduced by Mr. Griffin in the year 1810. Our drawing was taken from a fine specimen in the collection of Dugdale Houghton, Esq., of Edgbaston, near Birmingham.

It requires the heat of the stove to grow it well, although it will live in a warm greenhouse. The soil most suited to its growth is a mixture of sand, loam, and a small quantity of peat, using plenty of drainers, which are essentially requisite. It should be liberally supplied with water when in a growing state, but suffered to get nearly dry when the leaves begin to decay. It flowers at all seasons of the year, but generally in the spring. It may be increased by offset bulbs, and by seeds, which may be perfected if assisted by artificial impregnation.

It will be seen that we have followed the Hon. and Rev. Mr. Herbert in the separation of Hippeastrum from Amaryllis, although his name has not been adopted by Mr. Ker, in the Botanical Register; or by Dr. Schultes in his elaborate work entitled "Systema Vegetabilium," and arranged according to the Linnean system. This indefatigable author makes Hippeastrum and the other genera of Mr. Herbert only as so many sections, and preserves the genus Amaryllis entire, but whether with justice or not we must leave others to decide. For the information of our readers who may not know the grounds of the separation, we will quote Mr. Herbert's own words,—

"Hippeastrum belongs to a different section to Amaryllis: 1. By having a hollow scape. 2. By its black shelly seeds. 3. The seeds not bursting the capsule prematurely. 4. The oblique mouth of the tube abbreviated on the under side by the deeper incision of the perianth. 5. The fourfold instead of alternate diversity of the segments. 6. The fourfold instead of alternate insertion. 7. The fourfold instead of alternate length of the filaments. 8. The nectareous beard, or screen, in several species. 9. The germen sloped from the peduncle. 10. The tube sloped from the germen. 11. The constriction of the germen in the middle. 12. The capsule widest instead of narrowest at the base. 13. The flower accompanying or following instead of preceding the leaves. 14. The growth of the leaves being vernal instead of autumnal. 15. The plants occidental instead of African."

N° 53



Braſsia Cochleata.

J. Graf Printer to her Majesty

BRASSIA COCHLEATA.

(*Spoon-lipped Brassia.*)

LINNEAN SYSTEM.	NATURAL ORDER.
GYNANDRIA MONANDRIA.	ORCHIDACEÆ § VANDEÆ. (*Lindl.*)

GENERIC CHARACTER.

Brassia (R. Brown). *Perianthium* explanatum. *Sepala* et *petala* angusta, libera, æqualia; his nunc minoribus. *Labellum* planum, indivisum, ecalcaratum, columnâ continuum, basi bicristatum. *Columna* libera, aptera, nana. *Anthera* 1-locularis. *Pollinia* 2, posticè sulcata, *caudicula* brevi, *glandulâ* crassâ. Epiphytæ pseudobulbosæ. *Folia* pergamenea. *Scapi* radicales, vaginati. *Flores* speciosi, spicati. (*Lindl. Gen. et Spec. Orch.*)

Perianth explanate. *Sepals* and *petals* narrow, free, equal; the latter sometimes smaller. *Lip* plane, undivided, spurless, continuous with the column, two-crested at the base. *Column* free, wingless, dwarf. *Anther* 1-celled. *Pollen-masses* 2, furrowed posteriorly, with a short *caudicula*, and a thick *gland*. Pseudobulbous epiphytes. *Leaves* of the consistence of parchment. *Scapes* radical, sheathed. *Flowers* handsome, spiked.

SPECIFIC CHARACTER.

B. cochleata; *sepalis petalisque* subæqualibus, linearibus, acuminatis; *labello* elongato-cochleato, acuminato.

Sepals and *petals* somewhat equal, linear, acuminate; *lip* elongated, spoon-shaped, acuminate.

Descr.—*Pseudobulbs* ovate-oblong, furrowed, the base clothed with sheathing leaves, the apex bearing two leaves. *Leaves* linear-lanceolate, acute, keeled. *Scape* racemose, pendulous. *Sepals* and *petals* plane (not undulated), pale green, elegantly marked with brown. *Lip* elongated, striated, marked with white and brown dots, somewhat constricted in the middle, then forming a spoon-like cavity, and terminating in a lengthened, somewhat recurved apex. *Bracteas* small.

Among orchidaceous plants, the genus Brassia is remarkable for the spider-like shape of its flowers, which are no less curious than elegant. The present plant differs more particularly from the species hitherto known, in the spoonlike shape of its lip. They are all natives of America within the tropics. B. cochleata is a native of Demarara, where it was found on the banks of the Demarara river, some forty miles from its mouth, by Mr. Henchman, of Messrs. Lowes', Clapton Nursery, from whom it was received in the autumn of 1834, by John

Willmore, Esq., of Oldford, near Birmingham. In that gentleman's collection it flowered for the first time in the spring of 1836, where our drawing was made, with his usual accuracy, by Mr. R. Mills.

The genus *Brassia* was so named in commemoration of Mr. Brass, a very intelligent gardener, and who is said to have possessed considerable botanical knowledge. He went to Africa about the year 1790 to collect seeds and plants for Sir Joseph Banks, Dr. Fothergill, and Dr. Pitcairn.

Like the greater number of orchidaceous plants, it requires to be kept in the moist stove while growing, but more cool and dry while in the dormant state. It should be potted in rough sandy peat mixed with small pieces of drainers, the lower half of the pot being filled with drainers. It may be increased by dividing the pseudobulbs.

Fig. 1, anther-case; 2, pollen-masses, with their caudicula and gland.

ON THE PROPAGATION OF GARDEN ROSES,

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

Garden Roses are usually increased by layering, budding, or grafting; and but seldom by cuttings. The first method has long been practised both in nurseries and private gardens.

Budding and grafting, which were first introduced upon the Continent, have been extensively practised with the more rare sorts, and are now becoming pretty general in the English nurseries. Plants worked in this way flower more freely, but are sometimes apt to perish before attaining any great age. Notwithstanding the advantages of budding and grafting, layering is still the most general method of increasing the good old sorts. The *old Moss Rose* and the *Rose Unique* (both admired by every cultivator of roses), are, however, difficult to be obtained from layers, as they often require several years to make good plants.

The following process is a ready method for obtaining good plants of both these sorts.

Take up some old plants, carefully preserving all the long fleshy thick roots, and cut the roots into lengths of from two to three inches each, in the latter end of February. Prepare a bed of very rich soil, take off about three inches of the surface, and put on about an inch of fine light soil. Lay the cuttings of the roots flat, about four inches apart; cover them over with an inch of some light soil, then with an inch of good rotten cow-dung, and finally finish with two inches of the common soil. Each root will send up one or more strong shoots, producing abundance of fine, healthy, fibrous roots among the dung. They should be transplanted singly in winter, and will flower freely the ensuing season. Most of the hardy roses may be obtained in the same way, but it is most applicable to the *Moss Rose* and *Rose Unique.*

ON THE CULTURE AND ESCULENT PROPERTIES OF TROPÆOLUM TUBEROSUM.

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

This plant proves perfectly hardy, producing tubers in abundance, and pleasant flavoured, which circumstance may cause it to be cultivated as an esculent vegetable. About twenty-five plants were planted out for experiment last season in the Birmingham Botanic Garden, about one half of which were tubers planted in April, before they began to vegetate; the others were raised from cuttings kept under glass until near a foot high, and then turned out (balls entire) in July. They began to show flower buds in September, a few of which expanded before cut off by the frost. All did equally well, producing when taken up in November, *half a bushel of tubers.* The sets were planted three feet apart, and the stems were so luxuriant that they covered a space of at least six feet in circumference. Those that had their shoots shortened occasionally were the most prolific in tubers, and which were formed near the surface around the stems, indicating that they require earthing up like potatoes. It is probable after the shoots are cut, and begin vigorously to shoot again, that by earthing over some of these the crop may be augmented. The best method of cooking them has probably yet to be discovered by experience; but when simply boiled in water they are of a soft pulpy substance, and in taste resembling sea kale mixed with the hot taste of garden cress. It appears from Loudon's Gardener's Magazine for last month, that this plant has also been grown as a vegetable last season, in the Experimental Garden of the Royal Caledonian Horticultural Society, Edinburgh, some tubers having been exhibited at a meeting of the Society on the 7th of December last. The tubers were cooked while the council were sitting, and found to be "equal in flavour to the best asparagus." The tubers when taken up may be stored for winter use along with the potatoes.

Tropæolum tuberosum is also worthy of being cultivated in the flower garden as an ornamental climber for covering trellis work, where, if planted in a warm south aspect, it would cover a large space, and produce an abundance of flowers.

TO PROPAGATE THE GOOSEBERRY AND CURRANT BY CUTTINGS,

SO AS TO PREVENT SUCKERS BEING SENT UP FROM THE ROOTS.

BY A PRACTICAL GARDENER.

No plants are of easier propagation by cuttings than the gooseberry and currant, which should be taken from the young wood at the winter pruning.

The usual method is to take the lower part of the strongest shoots, about fifteen inches in length, cutting out all the eyes except three or four at the top, which are left to form the head of the future bush. The eyes are cut out to prevent them from sending up suckers from the root or stem; and every grower of these fruits knows how injurious they are to the health of the bushes, as well as troublesome to remove effectually, particularly when they come up from a deep part of the stem; and it too frequently happens that the place from whence one has been removed is succeeded by several the ensuing summer.

To prevent the possibility of the bushes sending up suckers, the cuttings should have every eye (except three or four at the top) *cut clean out of the solid wood.* This is readily done with a sharp knife, which should be inserted about half an inch below each eye, cutting gradually deeper until under the eye, and bringing the knife out at the same distance *above,* as it had been inserted *below.* The operation is similar to taking off buds in the summer for working fruit trees.

About one-third of the cuttings prepared in this way perish; but the remainder, by their vigorous growth and the certainty of their never sending up suckers, fully compensate for the loss. The reason of so many of the cuttings perishing is, that cuttings made by the ordinary process send out roots from the remains of every eye under ground as soon as the growing season commences; whereas by the method now recommended every vestige of the bud is removed, and the roots issue from every part of the stem, but are sent forth at a much later period of the season, and consequently the buds drop off before the cuttings are furnished with roots for their support. The usual depth to plant the cuttings is from four to six inches.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

BOMBACEÆ. Kunth.

Plagianthus Lampenii. Booth. MSS. Mr. Lampen's Plagianthus. *Bot. Reg.* N. S. p. 22. Raised about five years ago by the Rev. R. Lampen, from seeds sent from Van Diemen's Land, where it is said to be a native. It is very hardy, and is likely to prove an interesting addition to our hardy evergreens. It is known about London under the erroneous name of *Sida Pulchella. Bot. Reg.*

RUTACEÆ. Juss.

Boronia crenulata. Smith. Crenulated Boronia. *Bot. Reg.* N. S. t. 12. A native of King George's Sound, where it was found by Mr. Menzies, during the voyage of Vancouver, and described by Sir James Edward Smith from specimens then brought over. It is, however, a new introduction to our gardens, and one of the handsomest of the whole genus. The drawing was taken from a specimen in Messrs. Loddiges' collection. It may be increased by cuttings or layers. *Bot. Reg.*

LEGUMINOSÆ. Juss.

Acacia semi-verticillata; glabra, phyllodiis semi-verticillatis subulato-linearibus pungentibus, uninerviis, spicis axillaribus solitariis: petalis 4-fidis recurvis.

This species is allied to *A. verticillata*, Willd.; but from that species it is certainly distinct, both in habit and in general appearance. The leaves are in threes, arranged in half-whorls, erect, and are more fleshy and thick than those of *verticillata*, as indeed is the whole plant. They are also alternately disposed, and the young branches are perfectly smooth. The flowers are disposed in spikes, of from six to ten in a cluster in the centre of the branch, and not as in *A. verticillata*, which are from the base to the apex; the flowers are also less crowded. It is a native of New Holland, and was raised from seeds which were presented to the Birmingham Botanic Garden by the Right Honourable the Earl Mountnorris. Seeds were also presented about the same time by J. W. Crompton, Esq. and Joseph Hodgson, Esq.

PHILADELPHACEÆ. Lindl.

Philadelphus hirsutus. Nuttall. Hairy Philadelphus. *Bot. Reg.* N. S. t. 14. A hardy shrub, the smallest of all the genus, flowering from about the middle of July. It was discovered by Mr. Nuttall on the rocky banks of the French broad river Tennessee, near the warm springs, and is readily distinguished by its undivided four-grooved stigma. It may be increased by cuttings, or perhaps more readily by layers of the young wood, at the latter end of August. *Bot. Reg.*

P. Gordonianus. Lindl. Mr. Gordon's Philadelphus. *Bot. Reg.* p. 21. This is described to be a species of great beauty, sent from North-west America by Mr. Douglass, who found it in such abundance that it formed underwood along the banks of the Columbia river. Its height is from eight to ten feet. It differs from the other species by its deeply-serrated leaves, flowers growing in close clusters, broad reflexed calyx, and nearly superior fruit. *Bot. Reg.*

CACTEÆ D. C. TRIBE (*Opuntaceæ*).

Mammillaria atrata. Hort. Mackie. Dark-green Mammillaria. *Bot. Mag.* t. 3642. A beautiful plant from the choice collection of Mr. Mackie, of Lakenham, near Norwich, where, by that gentleman's skilful management, it flowers in high perfection. Pfeiffer, in his Enumeratio Cactearum, refers M. atrata of the gardens to the M. rhodantha, Link et Otto, Hort. Berolinensis, from which species this plant is wholly different. Its native country does not appear to be correctly known. *Bot. Mag.*

COMPOSITÆ. Vail.

Cosmus scabiosoides. H, B, et K. Scabious-like Cosmus. *Bot. Reg.* N. S. t. 15. A beautiful species, originally found by Humboldt and Bonpland on the western slope of the mountains of Mechoacan, near Pazcuaro, nearly 7000 feet above the sea. It has also been met with near Tlalpuxahua. The seeds from which this species was raised were imported from Mexico by G. F. Dickson, Esq., F. H. S., and presented to the Horticultural Society of London. It is perennial, and tuberous-rooted, and may be increased, propagated, and cultivated, after the manner of the Dahlia. *Bot. Reg.*

Dahlia Barkeriæ. Caule hirsutissimo, ramosissimo; foliis impari pinnatis, foliolis ovatis, inciso-dentatis; floribus conniventibus; petalis lanceolatis, pallidè roseis cum purpureis striatis.

This very distinct and delicate Dahlia was imported in the spring of 1837, by G. Barker, Esq., of Springfield near Birmingham, with whom it flowered the same autumn. It grows about three feet high, is branched from the base, and forms a complete bush of from about six to eight feet in circumference. The stems are very hairy, indeed almost bristly. The flowers are of a pale rose colour, striped with purple. The petals are delicately shaped, and connivent, forming a kind of cup when fully expanded. It was found by the collector in the forests in the vicinity of Valladolid, growing on the rocks in light black vegetable soil. The aspect was north, the temperature 70, and the atmosphere moist.

We have named it in compliment to Miss Barker, the accomplished daughter of George Barker, Esq., a lady whose love and admiration of plants induce her to devote much attention to her father's splendid collection.

We shall give a figure and further description of it in a forthcoming number.

SCROPHULARIACEÆ. Lindl.

Pentstemon crassifolius. Lindl. Thick-leaved Pentstemon. *Bot. Reg.* N. S. t. 16. A handsome suffruticose species, flowering about the end of May. It is a native of the North-west of America, raised from seeds sent by the late Mr. Douglass to the Horticultural Society of London, in whose garden it was figured in June last. It is distinguished from all other species by its coriaceous, entire, obovate, somewhat fleshy leaves. It requires the same treatment as *P. Scouleri*, and may be either grown in a peat border, or in any rich garden soil. It is propagated by layers and cuttings from July to September.

ERICACEÆ. Lindl.

Erica chloroloma. Lindl. Green-tipped Heath. *Bot. Reg.* N. S. t. 17. This pretty species is figured from the collection of Mr. J. Young, nurseryman, Taunton, which flowered in the year 1836.

It belongs to Mr. Klotzsch's section (Intestiniflora), or to Professor Don, genus Syringodea, but quite distinct from any species before described. It may be increased in the usual way by cuttings. *Bot. Reg.*

Erica florida, *var.* campanulata. Hook. Round-headed, bell-flowered var. *Bot. Mag.* t. 3639. This is a delicate species, and was communicated from the choice collection at Bothwell Castle in May, 1837, having been raised from seeds of *E. florida* by the very intelligent gardener Mr. Turbull. Although only two years old, it is two and a half feet high, and in profusion and beauty of flowering very far superior to Florida, raised from the same lot of seeds; so that Mr. Turbull suspects that the individual in question has been fertilised with the pollen from some insect. *Bot. Mag.*

CHENOPODEÆ. Vent.

Chenopodium Quinoa. Willd. Useful Quinoa. *Bot. Mag.* t. 3641. This plant is not valuable for its beauty, but for the nourishment it affords to the inhabitants in the temperate parts of South America, amongst whom it is cultivated as a valuable article of food. *Bot. Mag.*

ARISTOLOCHIÆ. Juss.

Aristolochia saccata. Wallick. Pouch-flowered Birthwort. *Bot. Mag.* t. 3640. A beautiful plant, native of Silhet, and introduced into the Royal Botanic Garden, Edinburgh, from the Calcutta Garden, in the year 1829. It flowered in September last, but formed no fruit. There are some observations from the pen of Dr. Graham on the entrapping of insects which are worthy of the attention of the curious. *Bot. Mag.*

CONVOLVULACEÆ. Juss.

Ipomæa Schiedeana. Hamilton, not Luccarini. *Bot. Reg.* This is a splendid climber, introduced by seed sent by that distinguished botanist Dr. William Schiede, after whom it has been named. The seeds were sent to Dr. Hamilton of Plymouth, who gave some to Mr. Pontey, by whom they were sown, and last June produced the present plant. The flower which first opened exceeded in size and splendour any which have succeeded it, exceeding in diameter four inches, and of a bright cærulean blue; and the number of flower-buds could not have been less than 500, of which as many as fourteen have been opened at once, making a most splendid appearance.

Seeds have been distributed by Dr. Hamilton to Messrs. Loddiges, Hackney, Botanic Garden, Liverpool, and Professor Deveau, the Curator of the Botanic Garden, Angers. It is allied to *Ipomæa rubro-cærulea.*

MONOCOTYLEDONES.

IRIDEÆ. Juss.

Babiana ringens. Herbert. *Bot. Reg.* p. 18. This species is a native of the Cape of Good Hope, and flowered at Spofforth in July, and ripened its seeds standing out of doors in pots of sandy loam. It is completely separated from *Antholyza* by its seed. Its deep rich scarlet blossoms are highly ornamental. *Bot. Reg.*

ORCHIDACEÆ.—TRIBE MALAXIDEÆ § PLEUROTHALLEÆ.

Pleurothallis circumplexa. Lindl. Enwrapped Pleurothallis. *Bot. Mag.* p. 24. A curious species, obtained from Mexico by Messrs. Loddiges. It approaches *P. saurocephala* and *prolifera*, but differs in the peduncle being strictly embraced by the base of the leaf. The flowers are small, and of a dirty brownish yellow colour. *Bot. Reg.*

§ DENDROBIEÆ. TRIBE EPIDENDREÆ.

Epidendrum lacerum. Lindl. Lacerated Epidendrum. *Bot. Reg.* p. 17. A native of Havannah, introduced in the spring of 1835 by Captain Sutton, and added to Sir Charles Lemon's collection at Carclew, where it flowered in December, 1836. It is allied to *E. elongatum*, but it is of a more lax and slender habit. The leaves are much narrower and thicker, the stem is erect, not zigzag, as in *E. elongatum*, and the labellum is larger and deeper fringed. *Bot. Reg.*

Epidendrum tesselatum. Bateman. Checker-flowered Epidendrum. *Bot. Mag.* t. 3638. A pretty Epidendrum of the odoratissima section, a native of Guatemala, and sent by Mr. Skinner to Knypersley in 1836, where it flowered in June and July last. *Bot. Mag.*

Bulbophyllum setigerum. Lindl. *Bot. Reg.* p. 21. A curious little epiphyte, obtained by Messrs. Loddiges from Demerara. The flowers are small, and of a dull purple upon a light green ground. The structure is remarkable in the presence of a minute tubercle at the base of the petals on the outside, which in another species, *B. bracteolatum*, from the same country, is in the form of a distinct scale. *Bot. Reg.*

TRIBE VANDEÆ.

Maxillaria variabilis, *var.* unipunctata. Lindl. *Bot. Reg.* p. 23. A singular little epiphyte, received by Sir Charles Lemon, Bart., with others, from the Horticultural Society, in March, 1837, in whose collection it flowered January, 1838. It was gathered by Mr. Hartwig in the neighbourhood of Vera Cruz. It is also in the very rich collection of Thomas Harris, Esq., of Kingsbury. *Bot. Reg.*

Govenia liliacea. Lindl. Lily-flowered Govenia. *Bot. Reg.* A small tuberous plant about a foot high, imported from Mexico by G. Barker, Esq., of Birmingham. It has the habit of *Bletia*, and flowers in the month of July. The colour of the flowers is not a good pure white, but delicately streaked with lines of rather pale purple. It is at present extremely rare, and Dr. Lindley states that he has not heard of it in any other collection except Mr. Barker's *Bot. Reg.*

Oncidium carinatum ; pseudobulbis ovatis ; foliis lanceolatis ; scapo erecto ; floribus secundis racemosis ; petalis conniventibus, maculatis ; pedicellis flexuosis ; labello cristato integerrimo ; bracteis scariosis.

This is a pretty plant, but not showy ; and although not strictly agreeing with the generic character, Oncidium, we consider it one of those exceptions mentioned by Dr. Lindley in the Botanical Register which come too near it to be separated. It differs from Oncidium in having the wings of the column in the centre instead of the apex : but the pollen-masses, caudicula, and gland, are certainly those of Oncidium. The labellum is also entire, and keeled from the apex. It appears allied to *O. gracile* of Von Martius, described by Dr. Lindley in the work above quoted. It is a native of Xalappa, where it was gathered in the year 1837, and imported with many other rarities by George Barker, Esq., Springfield, near Birmingham.

MONTHLY SCRAPS.

The London Collections.—At Messrs. Rollisons', of Tooting, a very rare orchideous plant is now in flower, Huntleya Meleagris ; it is the only plant in the kingdom, and excites much interest among the amateurs of orchidaceæ. There is at present but a single flower, and that perhaps not so favourable a specimen of the beauties of the plant as some of its successors may prove, for the beautiful chequering of the petals is not sufficiently distinct. This collection boasts another orchidaceous novelty at the present moment :—a beautiful plant presenting some characteristics of the genus Oncidium, and somewhat resembling the Oncidium Tigrinum, described by botanists, but is thought to be a new genus * ; the present drooping raceme of eight or ten flowers is merely an adventitious shoot, one quarter of the size of the old stems remaining when the plant was imported, and consequently the flowers, of a delicate straw colour richly spotted with brown, will most likely be much larger than the present; and as it is a proper flowerer, it will form a very desirable and beautiful addition to collections.

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* This plant will be figured in No. XV. of the Floral Cabinet.

At Messrs. Lowes', at Clapton, is a beautifully grown plant of the Chorozema Cordata, recently imported by that indefatigable amateur Captain Mangles. It is completely covered with its beautiful scarlet flowers*. A new Camellia too is now in bloom here, but beautiful as it is, it presents but a trifling difference from species already obtained.

Cultivation at Hamburg.—Forbes, in his interesting Sketches, tells us that he found last year in the nursery of Mr. Booth, of Hamburg, a great variety of ornamental trees and shrubs, such as he had not seen in any collection in England. Mr. Booth, it appears, is quite an enthusiast, and spares no expense to procure new things. He has planted a walk nearly a mile in length with a collection of hardy trees and shrubs, where the different species of each genus are brought at once under view for comparison, all arranged according to the natural system of Jussieu.

CALENDAR OF GARDENING OPERATIONS FOR APRIL.

Shift stove, greenhouse, and Alpine plants.

Plants in the houses must also be fumigated when necessary, to destroy the aphis, or green fly, which is apt to attack Calceolarias, Pelargoniums, and other soft-wooded plants, at this season.

Water greenhouse plants overhead with the engine or syringe, at least once a week in fine sunny weather.

Cuttings of house plants may now be successfully propagated.

Pot off Balsams from the seed-pots singly into small-sized pots while in their seed-leaf, and before they get drawn, then plunge them into a brisk hot-bed near the glass; and as soon as the roots begin to mat, shift them into single-sized pots.

Cockscombs, Globes, Browallias, Capsicums, and other tender annuals, will also require potting from the seed-pots.

Divide and propagate Dahlias from cuttings.

Cuttings of Pansies may now be put in.

Lay hardy Ericas, Azalias, and other American plants.

Divide herbaceous plants, if wanted for increase, and reduce the more luxuriant, particularly Asters, Helianthuses, Rudbeckias, &c., of robust growth, more especially Asters, which always flower much finer when reduced to small pieces.

Shift Carnations and Picotees into their flowering pots, using a compost of rich loam, rotten dung, and grit sand.

Sow annuals to keep up a succession of flowers until late in autumn.

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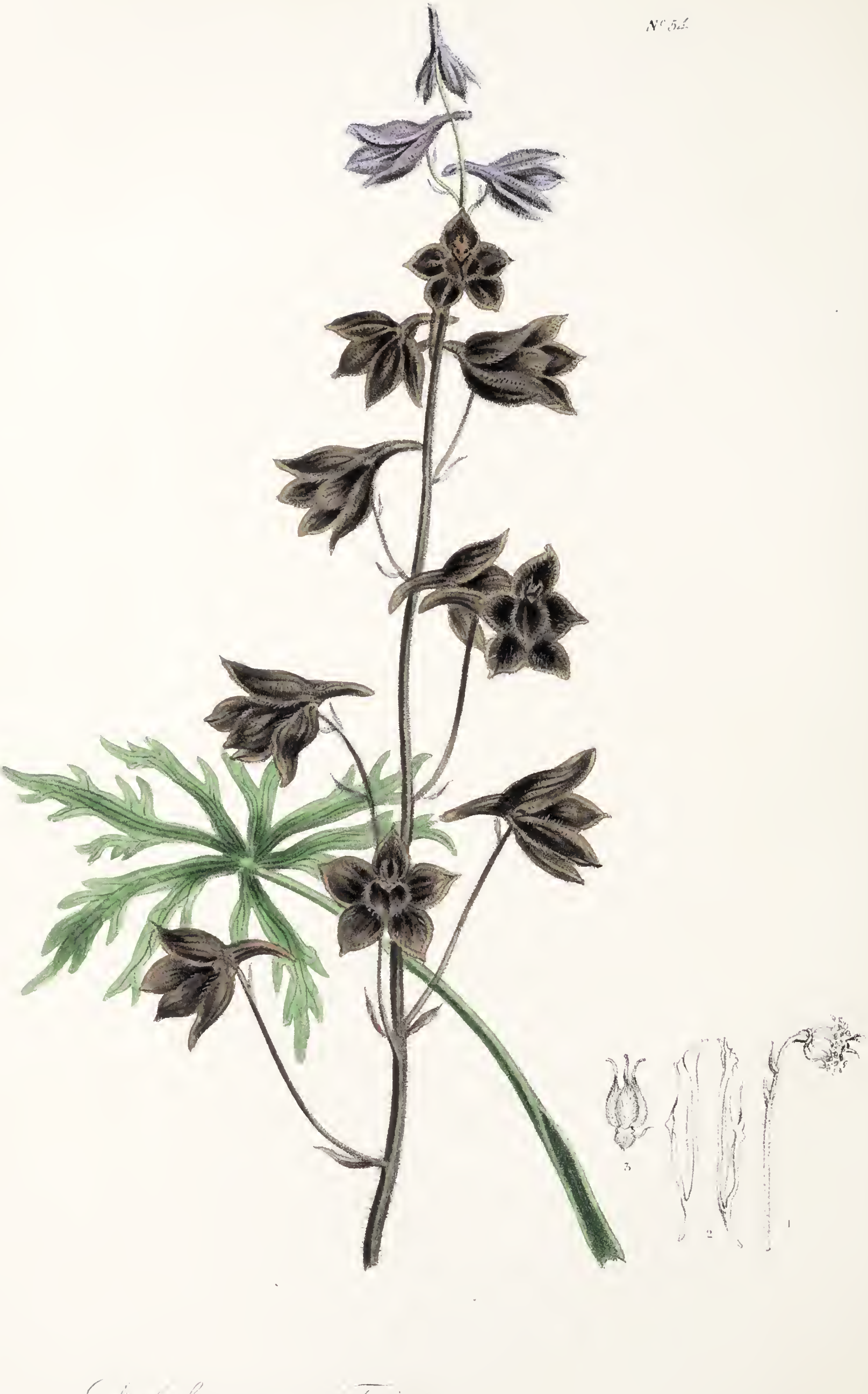
* Figured in the present Number of the Floral Cabinet.—*Ed.*

No 54.



Delphinium Triste.

een del.

J. Graf Printer to her Majesty

DELPHINIUM TRISTE.

(*Dark-flowered Larkspur.*)

LINNEAN SYSTEM.	NATURAL ORDER.
POLYANDRIA POLYGYNIA.	RANUNCULACEÆ.—(*Juss. Decand. Syst.* i. p. 127.)

GENERIC CHARACTER.

Delphinium. (TOURN.) *Calyx* deciduus, petaloideus, irregularis, sepalo nempè superiore in calcar deorsùm producto. *Petala* 4; 2 superiora basi in appendicibus intrà calcar contentis producta.—(*Decand. Syst.* i. p. 340.)

Calyx deciduous, petal-like, irregular, the upper sepal being prolonged downwards into a spur. *Petals* 4, the two upper ones prolonged at their base into appendages contained within the spur.

SPECIFIC CHARACTER.

D. triste; *petiolis* basi vix dilatatis; *foliis* 3-5 partitis; *lobis* angustis, inciso-subpinnatifidis, acutis; *summis* 3-partitis; *lobis* integris; *racemo* laxo subramoso; *calcare* curvulo, obtuso; caule, floribus, pedicellis bracteolatis, capsulisque pubescentibus.

Petioles scarcely dilated at the base; *leaves* 3-5 parted; *lobes* narrow, somewhat inciso-pinnatifid, acute; *upper leaves* 3-parted; *lobes* entire; *raceme* loose, somewhat branched; *spur* a little curved, obtuse; *stem*, flowers, bracteolated pedicels, and capsules downy.

Delphinium obscurum.—*Stev.*

DESCR.—A hardy, perennial, *herbaceous* plant, attaining the height of about three feet; *leaves* dark green; *flower-stems* slender, erect, occasionally branched; *flowers* somewhat distant, with long pedicels which become gradually shorter towards the top of the raceme; *bracteas* (*bracteolæ*) minute, lanceolate, two or three upon each pedicel. The flowers are of a dark brown, slightly tinged with puce, with a few streaks of jet black, appearing, before expansion, of a dusky purple; they are densely hairy, the pubescence on the inner surface being pale or hoary.

WE introduce this remarkable species of *Delphinium* to the notice of our readers, rather on account of its *rarity* than for the sake of its *beauty*, which, it must be confessed, is by no means dazzling; yet, like many other plants whose aspect is equally unattractive, it will be found not unworthy of a closer examination. The florist may look upon it with an eye of indifference, or perhaps of contempt; but the botanist will regard it with that degree of interest which a vegetable novelty (more especially if a native of a distant country) never fails to excite in the mind of every accurate observer of nature.

It was well said by an old writer that "the various productions of nature were not made for us to *tread upon*, nor only to feed our eyes with their grateful variety, or to bring a sweet odour to us; but there is a more *internal beauty* in them for our minds to prey upon, did we but penetrate beyond the surface of these things into their hidden properties." Let not our plant be despised therefore, because it is not arrayed in those rich and brilliant colours by which the greater number of its family are distinguished; nor cast aside as useless because we cannot perceive the design with which it was formed by its almighty Creator:—but rather let us exclaim with the poet,

> "Let no presuming impious railer tax
> *Creative wisdom*, as if aught was formed
> In vain, or not for admirable ends.
> Shall little haughty ignorance pronounce
> His works unwise, of which the smallest part
> Exceeds the narrow vision of her mind?"

Our drawing was made from a plant in the collection of the Birmingham Botanical and Horticultural Society, which was raised from seeds received, in 1835, from John Hunneman, Esq.

The genus *Delphinium* is divided by Decandolle into four sections, viz.—

1. *Consolida*, which is thus characterised:—seed-vessel 1, petals 4, united in one; internal spur of one petal. *Annuals;* of this section an example (*Delph. Divaricatum*) is given in our first volume, plate 16.

2. *Delphinellum*:—seed-vessels 3, petals free, smooth; internal spur of one petal. *Annuals.*

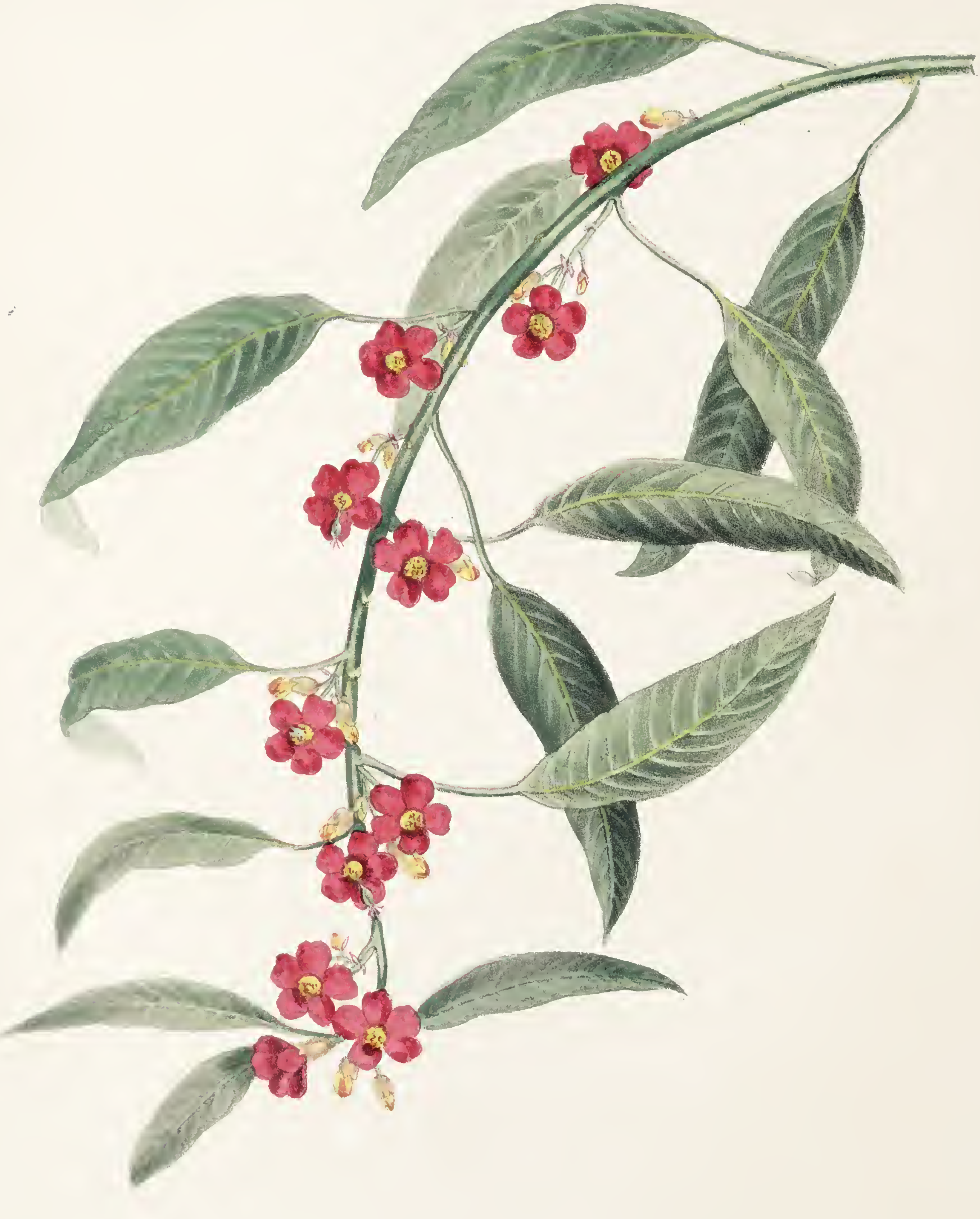
3. *Delphinastrum*: seed-vessels 3 to 5; petals free, inferior in the disc, bearded, bifid; spur elongated, internal of 2 petals. *Perennials*; this section is again subdivided into—species having the limb of the lower petals *entire*, and species having the limb of the lower petals *bifid*, the former consisting of 3, the latter of about 25 species. An example of the latter sub-section (*Delph. Puniceum*) was given in our first volume, plate 7. To the same section belongs *Delph. triste.*

It is a native of Daouria and Siberia, and will grow in any rich garden soil, flowering in July and August. It does not appear to admit of increase by dividing; it ought therefore to be raised from seeds, which are produced tolerably freely.

Fig. 1. A flower with the sepals and petals removed, to show the indefinite stamens. Fig. 2. The upper petals magnified, showing their lengthened bases, which are contained within the spur. Fig. 3. Capsules inserted on the torus.

For the derivation of the generic name *Delphinium*, vide vol. i. p. 14.

No. 55.



Euphorbia fulgens.

R. Mills pinx.

J. Graf Printer to her Majesty

EUPHORBIA FULGENS.

(*Brilliant Euphorbia.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DODECANDRIA TRIGYNIA.	EUPHORBIACEÆ.—(*Juss.*)

GENERIC CHARACTER.

Euphorbia (Lin.) *Involucrum* androgynum, 4-5 fidum extus, appendiculis glandulosis (petala Lin., nectaria aliorum); peripherici *pedicelli* incerti numeri, singuli cum singulis *staminibus* articulati. *Germen* pedicellatum, centrale. *Styli* 3-bifidi. *Capsula* 3-cocca.—*Sprengel.*

Involucrum bisexual, four or five-cleft externally, with glandular appendages (petals of Linnæus, nectaries of others) surrounding *pedicels* uncertain in number; *stamens* articulated with each other. *Germen* pedicellate, central. *Styles* 3-bifid. *Capsule* of 3 carpels.

SPECIFIC CHARACTER.

E. fulgens; fruticosa; *foliis* alternis membranaceis lanceolatis acuminatis integerrimis glabris patentibus, apice recurvis, petiolatis subflexuosis; ramis florigeris alternis racemosis secundis, in apice ramulorum; *involucris* pedunculatis, regularibus, campanulato turbinatis quinque fidis; *pedunculis* basi; *foliolo* minuto, lineari spathulato coccineo deciduo instructis; laciniis emarginatis inflexis, supra amœne ignescentibus, subtus vitellinis, intus ad basin appendicibus carnosis præditis; *pseudopetalis* quinque, laciniis involucri, alternis bifidis, fimbriatis conniventibus.

Fl. masc. *pedicellis* pluribus articulatis, filamento bifido, singulæ divisiones apice *antheriferæ* infra, paraphysibus plumosis interjectis.

Fl. fem. *pistillis* longè pedunculatis basi nudis; *stigmatibus* tribus bifidis basi connatis; *capsulis* lævibus triangularibus 3-coccis, pedunculo elongato nutante insidentibus.

Euphorbia fulgens.—*Karwinski in Herb. Lucæi!*

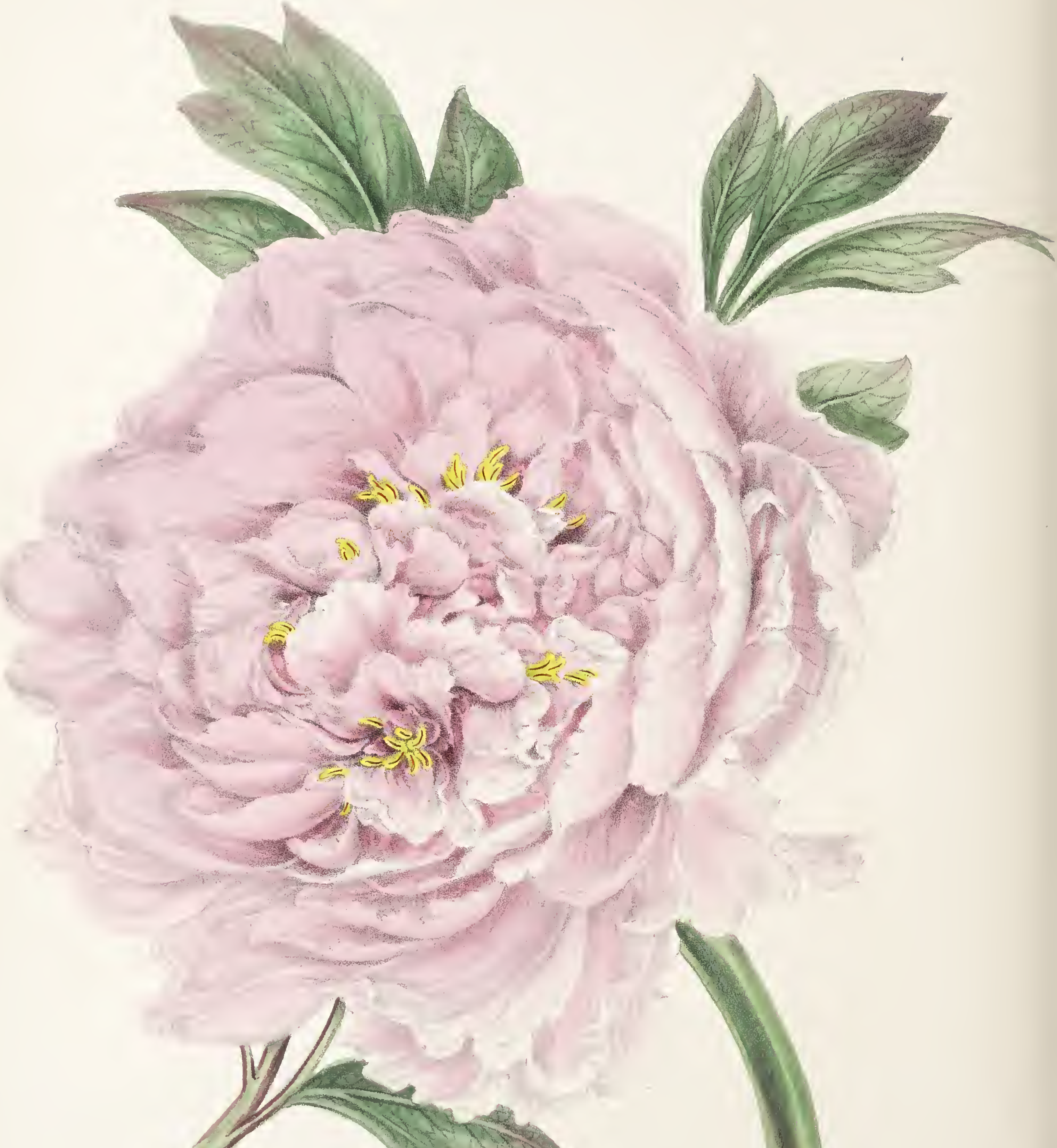
Hab. in Mexico, near Zacatecas, in the shady high mountains not far from the south.

Owing to the very lengthened specific character of Baron Von Karwinski, which has been kindly presented to us by Mr. Rauch, through J. C. Loudon, Esq., we shall not give a translation, as it would occupy too much space.

This is a most brilliant plant, as all must testify who have seen it, and was first introduced into the German gardens by Baron Von Karwinski, who found it in Mexico during his scientific journey, and who brought from thence living plants, as the seeds were found to lose their vegetating power in the space of twenty-four hours. It appears to have been introduced first into the English gardens at Bayswater by Mr. M. F. Rauch, about the year 1835, and who has published an account of it in the twelfth volume of the Gardener's Magazine, page 390, from which we abstract the following interesting particulars. He says, " Euphorbia fulgens is an elegant and very ornamental plant of the following characteristics. It is a branched, upright, leafy, freely-growing and freely-flowering shrub. All its green parts bear a glaucous bloom. Its shoots are slender, twig-like, round, glabrous, and curved outward in the terminal portion ; bearing the flowers along this portion in groups, in the axils of the leaves. The leaves have petioles nearly one inch long, and disks that are lanceolate, tapering to both ends, entire, about three inches long, and from half an inch to an inch across the broadest part. The groups of flowers are upon short stalks, and consist of from two to four flowers (as they would be ordinarily called), each upon a stalk about one inch long, and each showy from its involucre, which is of a bright red colour, and which has a tube of less than half an inch long, and horizontally-spread border of a diameter somewhat less than that of a sixpenny piece, and consisting of five obcordate lobes. One may imagine that a bush abounding in groups of the involucres displayed together must be splendid, and well merits the application of the epithet fulgens ; which, however, the inventor of the name may rather have intended to express a brilliance in the redness than the general effect produced by a display of flowers of this colour. The plant appears disposed to produce plenty of seeds."

It requires stove heat, and should be potted in sandy loam and peat with plenty of drainers, and ought to receive but a limited supply of water during winter. It may be propagated by cuttings, either of the old or young wood, which ought to be taken off with a heel, as the other parts of the wood are very spongy, and liable to rot before taking root.

The generic name Euphorbia is given in honour of Euphorbus, a physician to Juba, king of Mauritana.



Pæonia Montan.

J. Graf, Printer to her Majesty

PÆONIA MOUTAN. (Var. ROSEA PLENA.)

(*Chinese Pæony. Rose-coloured double variety.*)

LINNEAN SYSTEM.	NATURAL ORDER.
POLYANDRIA PENTAGYNIA.	RANUNCULACEÆ. (*Juss.*)

GENERIC CHARACTER.

Pæonia. (LIN.) *Calyx* 5-sepalus, foliaceus, inæqualis. *Petala* 5-10, suborbiculata. *Stamina* innumera. *Discus* carnosus, ovaria cingens. *Carpella* 2-5, grossa, stigmatibus bilamellatis crassis instructa, in folliculos capsulares conversa. *Semina* subglobosa, nitida. *Radices* fasciculatæ. *Folia caulina* biternatim secta. *Flores* ampli, albi aut purpurascentes. *D. C. Syst.* i. p. 386, prod. 65.

Calyx five-sepaled, leafy, unequal. *Petals* from five to ten, roundish. *Stamens* innumerable. *Disc* fleshy, surrounding the ovary. *Carpels* from two to five, thick, furnished with a two-plated thick stigma, turning into capsular follicles. *Seeds* roundish, shining. *Roots* fasciculate. *Stem leaves* divided biternately. *Flowers* large, white or purple.

SPECIFIC CHARACTER.

P. Moutan. *Caule* fruticoso; *foliorum* segmentis ovali-oblongis, subtus glaucis; *carpellis* villosis, 5. *Stem* shrubby; segments of the *leaves* oval-oblong, underneath glaucous. *Carpels* villous, five.

Pæonia Moutan. *Sims' Bot. Mag.* t. 1154.

Anderson, *Trans. Lin. Soc.* vol. xii. p. 252.

Rosea floribus subplenis, roseis, segmentis apice fissuris obtusissimis. *Bot. Repos.* t. 373. D. C.

Flowers nearly double, rose colour, segments very obtuse, divided at the apex.

THIS is one of the varieties of the species Moutan, introduced about the year 1794, and certainly a very splendid one. It was sent to W. H. Osborn, Esq., of Perry, near Birmingham, from the valuable and extensive collection of Earl Mountnorris. It flowered in unusual perfection last year in Mr. Osborn's collection, at which time our drawing was taken.

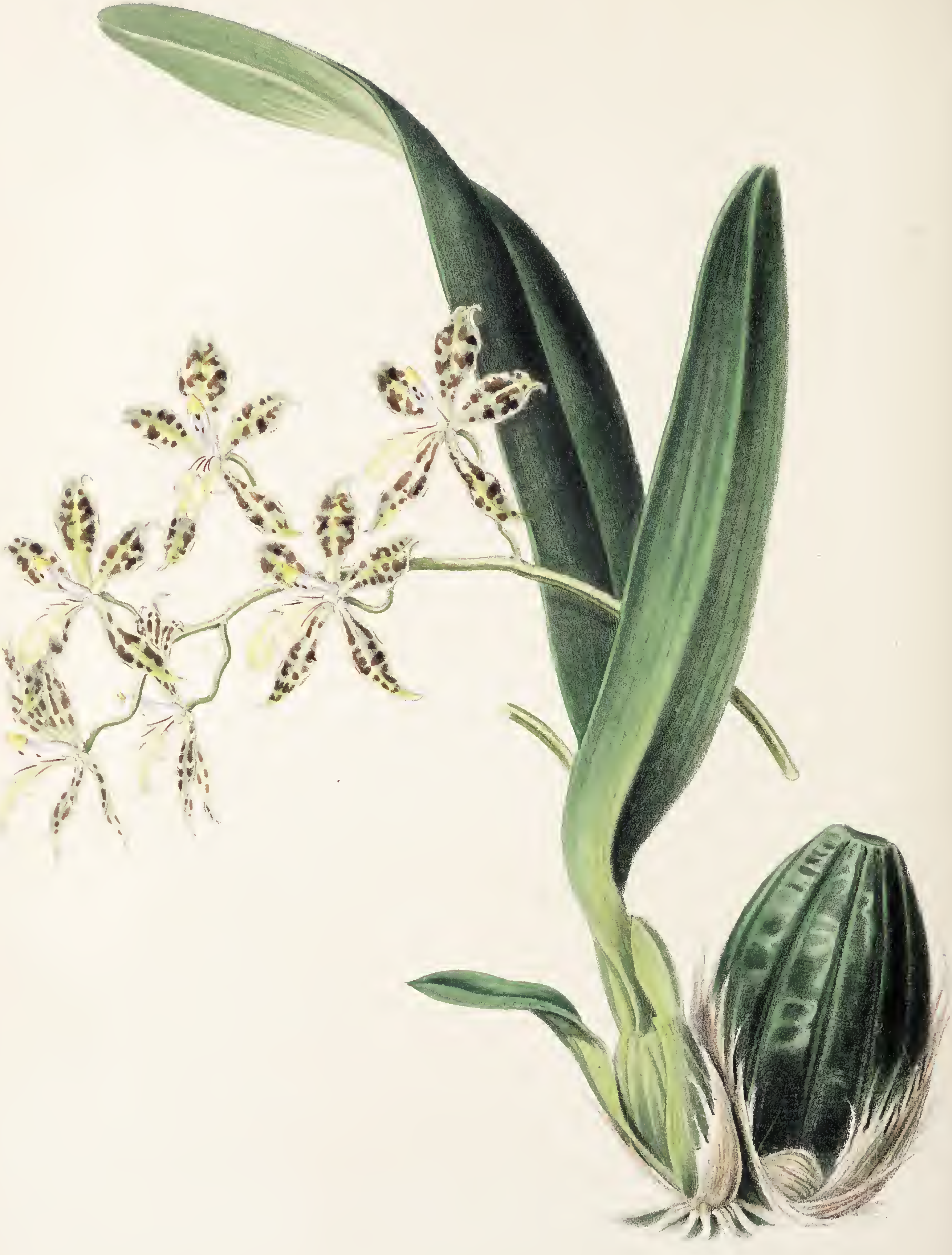
All the Moutans are hardy shrubs, which in a conservatory expand their blossoms in April and continue in bloom until the middle of May. If in the open border, they open in May and continue till June, and in consequence of their blooming early they ought to be planted in a sheltered situation, or have a moveable frame placed over them when they begin to grow, for the preservation of their flower-buds. They do best in a mixture of loam and peat. They may be increased by layers. The most successful method of layering is to lay down some of the stems just before vegetation commences, and cover them entirely with two or three inches of soil; the buds will push up above the ground, each bud forming a plant.

Pæonies appear to have been known at a very early period, for, according to Anderson in the work before quoted, they were known to Theophrastus, Pliny, and Dioscorides.

They appear to have been introduced into this country about fifty years ago. One of the varieties of P. Moutan, the variety papaveracea, when in perfection must be truly magnificent; its flowers are white marked with purple. It was introduced by Captain James Pendergast, who brought it for Sir Abraham Hume in the year 1802, in whose garden at Wormleybury Mr. Sabine states (*Hort. Trans.* vol. vi. p. 470) it had formed, in the year 1825, a bush forty feet in circumference and seven feet high, which in the middle of April was covered with flowers, almost unrivalled in magnificence, having produced 600 flower-buds, of which 130 were taken off, with the view of increasing the size of the other flowers. When expanded they were about ten inches in diameter, and sometimes more.

It is a native of China, and, according to the Missionaries' account, published at Paris in the year 1728, it is one of the most cherished plants of the Chinese. They are said to have cultivated it for upwards of 1400 years, and to have varieties to the number of 300, embracing all colours, even black!

The generic name is derived from Pæon, a physician, who first employed one of the species in medicine; and who is said, according to the Greek legend, to have used it to cure Pluto of a wound inflicted by Hercules. They have, in a great measure, lost those medicinal powers for which they were once celebrated.



Cyrtochilum maculatum.

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CYRTOCHILUM MACULATUM.

(*Spotted Cyrtochilum.*)

LINNEAN SYSTEM.	NATURAL ORDER.
GYNANDRIA MONANDRIA.	ORCHIDACEÆ, § VANDEÆ.

GENERIC CHARACTER.

Cyrtochilum (Humb. et Kunth.) *Perianthium* explanatum. *Sepala* libera, lateralia unguiculata. *Petala* paulò minora. *Labellum* ecalcaratum, indivisum, ungue tuberculato cum basi columnæ continuo. *Columna* brevis, alata. *Anthera* bilocularis. *Pollinia* 2; *caudiculâ* filiformi, *glandulâ* minutâ. Herbæ epiphytæ, vel terrestres, pseudobulbosæ. *Folia* coriacea. *Scapi* radicales, paniculati. *Flores* speciosi.

Perianth explanate. *Sepals* free, lateral ones unguiculate. *Petals* a little smaller. *Lip* spurless, undivided, with a tuberculated claw continuous with the base of the column. *Column* short, winged. *Anther* 2-celled. *Pollen-masses* 2, with a filiform *caudicula*, and a minute *gland.* Pseudobulbous plants, epiphytes or terrestrial. *Leaves* leathery. *Flowering stems* radical, panicled. *Flowers* handsome.

SPECIFIC CHARACTER.

C. maculatum; *pseudobulbis* ovatis, compressis, subangulatis, diphyllis, basi foliosis; *foliis* latè ligulatis, acuminatis, striatis, apice obliquè emarginatis; *scapo* simplici (?); *bracteis* brevissimis, squamæformibus; *sepalis petalisque* carnosis, obovato-lanceolatis, acutissimis; *labello* membranaceo, oblongo, apiculato, utrinque dentato, lamellis duabus ad basin, et corniculo utrinque; *alis* columnæ falcatis integerrimis. (*Lindl.*)

Pseudobulbs ovate, compressed, somewhat angled, two-leaved, leafy at the base; *leaves* broadly strap-shaped, acuminate, striated, obliquely emarginate at the apex; *scape* simple (?); *bracteas* very short, in the shape of scales; *sepals* and *petals* fleshy, obovate-lanceolate, very acute; *lip* membranous, oblong, apiculate, toothed on each side, with two *lamellæ* or plates at the base, and a little horn on each side; *wings* of the column falcate, very entire.

Cyrtochilum maculatum. *Lindl. in Bot. Reg.* No. 4, N. S. p. 30.

For an opportunity of figuring this handsome orchidaceous plant, we are indebted to Messrs. Rollison and Sons, of Tooting, in whose stove it has recently flowered. The flowers, which are moderately large, have a greenish yellow ground, marked with rich purple; the lip is cream-coloured, streaked with red. The flower-stem of the present specimen is simple, with six or eight flowers, but Messrs. Rollison expect (from the appearance of the *old* flower-stems produced in its native country) that when it flowers again under more favourable circumstances, it will produce a many-branched stem with from thirty to fifty flowers. Should this expectation be realised, it will make a splendid addition to an orchidaceous collection.

It is a native of Mexico, where it was found by Mons. De Champs, a most assiduous collector of *Cacti* and *Orchidaceæ*, and through whom Messrs. Rollison have been enabled to add to their fine collection many rare orchidaceous plants.

When we first examined a flower, we were aware of its near approach to *Cyrtochilum*, and were disposed to refer it there as a new species; but upon a closer inspection we had strong doubts of its belonging to that genus, its habit appearing to differ materially from *Cyrtochilum flavescens* of the Register, and the *labellum* instead of being undivided is decidedly three-lobed, although the lateral lobes are so completely reflexed beneath the middle lobe as only to leave a small portion observable, and thus giving the labellum the appearance of being undivided and slightly dentate. This, however, may probably not be sufficient to remove it from a genus to which, in many respects, it seems so closely allied; it merely presents a difficulty which not unfrequently occurs in some other genera. We have therefore adopted the name, and availed ourselves of the specific character of this interesting plant given in the *Botanical Register* of last month by Professor Lindley, whose intimate acquaintance with *Orchidaceæ* is too well known to require from us any further remarks.

To be grown in perfection it requires a warm, moist stove; but, like most of this tribe, must be kept more cool and dry while in the dormant state.

ON THE PROPAGATION OF PHŒNOCOMA PROLIFERA.—D. Don.

Elychrysum Proliferum. Willd. *Xeranthemum Proliferum.* Lin.

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

Phœnocoma Prolifera, although introduced in the year 1789, and an esteemed favourite with cultivators of greenhouse plants, still continues scarce, in consequence of its propagation not being well understood. It propagates readily from cuttings, but (unlike most of the other hard-wooded plants whose cuttings are selected from the young wood) those only must be selected which are at least two years old ; and if to be obtained, old scrubby plants are best suited for that purpose.

The cuttings should be made with a heel, and their tops left on, as they seldom require much dressing previous to being plunged in the sand. Plant them in a pot of sand two or three inches deep, giving them a good watering. Afterwards plunge them into a brisk hotbed, *without being covered with bell-glasses.* They will produce an abundance of roots in about two months, and if the cuttings are put in about April, will make strong plants the same season. When rooted, pot them singly with a third part sand, using plenty of drainers. Young shoots taken off when about two inches long will also root under glasses, but are very uncertain, requiring great care to prevent them from damping off ; and when they succeed they are long in making good plants ; whereas, almost every cutting of the old wood strikes readily, and is of a good size when ready for potting off.

NOTICES OF NEW WORKS ON BOTANY, HORTICULTURE, &c.

Withering's Systematic Arrangement of British Plants, by W. Macgillivray, A.M., F.R.S.E., Conservator of the Royal College of Surgeons, Edinburgh.

At a time when botany is probably exciting more general attention than at any former period, it gives us great pleasure to be able to announce to our readers the publication of several works well calculated to facilitate the study of that delightful science ; among which may be mentioned Macgillivray's Withering. The arrangement is according to the Linnean system, and the work is so judiciously condensed as to be brought within the compass of a small pocket volume. It will consequently be found a most useful companion by every student of British botany. Of its general accuracy we can speak from personal experience. The present edition (which is the third) we have not yet seen ; but it is stated to have been *brought down to the present period*, to have been *considerably enlarged*, and that " nearly one hundred species of plants have been added, chiefly of such as are peculiar to Ireland, to render the work applicable to that country as well as Great Britain. There is also added, the derivation or some account of the origin of the generic names; and a running number is attached to the genera and species, which the author believes will be found very useful." The same author has also announced a new edition of the late Sir James Edward Smith's "Introduction to Physiological and Systematical Botany," with considerable additions, which will form a very suitable companion to the volume above mentioned. To those who are satisfied with the Linnean arrangement, these two volumes offer every necessary information connected with the investigation of the British flowering plants.

A Manual of British Botany, in which the Orders and Genera are arranged and described, according to the Natural System of Decandolle; with a series of Analytical Tables for the assistance of the Student in the examination of the Plants indigenous to or commonly cultivated in Great Britain. By D. C. Macreight, M.D., Fellow of the Royal College of Physicians, and Lecturer on Materia Medica and Therapeutics in the Middlesex Hospital School of Medicine.

We hail with peculiar pleasure the appearance of this little volume, as being one of the very few which have been published in this kingdom, illustrative of the Natural system.

The student who is disposed to take a more philosophical view of the vegetable kingdom, as developed in the Natural system, and is consequently desirous of making himself acquainted with the principles upon which that system is founded, will find his efforts materially assisted by the possession of this work. The "Key to Botany," of Professor Lindley, may also be studied with great advantage; and as regards British Botany, Lindley's Synopsis will be found highly useful, of which we shall be anxious to see a new edition.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

LEGUMINOSÆ, § PAPILIONACEÆ. Lindl.

Mucuna pruriens. D. C. West Indian Cowitch Plant. *Bot. Reg.* N. S. t. 18. The specimen from which the drawing was taken was communicated by Frederick Perkins, Esq., of Chipstead Place, in whose house it produced, in September 1836, an abundance of its long handsome racemes of purple flowers. The substance called cowitch is probably obtained from this plant. It is the long sharp brittle hairs that clothe the pods, and some other parts of this, and other allied plants. When applied to the skin they produce an intolerable itching; this is not owing to anything deleterious in the hairs themselves, but to their mechanical action, as they break and pierce the skin. It is on this account that cowitch has been used medicinally as an anthelmintic.

Dr. Macfadyen says, that the stinging sensation may be removed by rubbing, so as to bruise the hairs, and by afterwards smearing with oil the part affected: or it is said the bristles will attach themselves to the rim of a hat passed over the skin, and may thus be withdrawn. *Bot. Reg.*

RHAMNACEÆ. D. C.

TRYMALIUM ODORATISSIMUM. Lindl. Sweet-smelling Trymalium. *Bot. Reg.* N. S. This genus has lately been established by Mr. Fenzl for the supposed species of Ceanothus inhabiting New Holland. They differ from the genus Pomaderris, of which many have the habit, in the presence of a distinct plaited disc surrounding the ovary, and from Ceanothus in their indehiscent fruit.

The species now defined is a new and very interesting addition to the genus; it was introduced from Swan River by R. Mangles, Esq., by whom a plant in flower was presented to the Horticultural Society of London in 1838. Mr. Mackay, the gardener at Sunning Hill, states, that the wood is soft or pithy, and that the plant is apt to damp off in winter, if over-potted and not kept in a warm and light situation. *Bot. Reg.*

PASSIFLORACEÆ. LINDL. PASSIFLOREÆ. JUSS.

PASSIFLORA ONYCHINA. Lindl. Lieut. Sulivan's Passion Flower. *Bot. Reg.* N. S. t. 21. This is a very pretty species, but by no means equal to many at present in cultivation for beauty.

It was introduced by Bartholomew James Sulivan, Esq., of her Majesty's ship the Beagle, who procured seeds of it from the Botanical Garden, Rio de Janeiro, in the year 1837, and presented them to Sir Charles Lemon, Bart., in whose garden the present plant originated. It has also been introduced by Mr. Lowe, of the Clapton nursery. The drawing was obtained from the stove of Miss Trail, Bromley, Kent, in the beginning of last November, who at the same time sent the following note:—"It is planted in a border, and from having been so placed for above twelve months without showing bloom, the gardener pruned it severely last spring, when it shot out with redoubled vigour. It is not known whether it will bear a cooler atmosphere. It does not show seed. Its time of flowering appears to be during the latter end of October, and through November. The soil it at present grows in is a rich sandy loam. The specific name Onychina was given to it in allusion to the blue colour of the flowers." *Bot. Reg.*

CACTEÆ. JUSS.

MAMMILLARIA FLORIBUNDA. Hook. Copious-flowered Mammillaria. *Bot. Mag.* t. 3647. This is really a beautiful species of Mammillaria, imported by Mr. Hutchins, from Chili, and now in the possession of Mr. Mackie, of the Norwich Nursery. It is allied to *M. atrata*, t. 3642, differing, however, in its stouter habit, larger, and more closely placed, and more projecting mammillæ, the stouter, and coarser aculei, larger flowers, and very unequal petals, which are moreover of a paler red colour, yellowish in their lower part. *Bot. Mag.*

BIGNONIACEÆ. Lindl.

Amphicome arguta. Royle. Finely-cut Amphicome. *Bot. Reg.* N. S. t. 19. This is a curious and delicate plant, seeds of which were given to the Horticultural Society by Professor Royle, who collected them on the Himalaya mountains, at the elevation of 6000 feet, from which a single individual was received, and produced its beautiful and graceful flowers in August, 1837. It is stated to inhabit the valley of the Buspa, and the country near Turanda in Kunawur.

The subject of the present plate is a very elegant, and rather slender, perennial; growing about a foot high, and probably hardy enough to stand out if planted in a dry situation, or on rock-work, and protected during winter from the wet and severe frost by a hand-glass. It is very impatient of wet even in summer, and requires to be kept dry during winter. The seeds should be sowed about February in loamy soil, and placed in a greenhouse. *Bot. Reg.*

MONOCOTYLEDONES.

TRIBE MALAXIDEÆ. Lindl.

Specklinia ciliaris. Lindl. Ciliated Specklinia. *Bot. Reg.* A small plant resembling Lepanthes, with purplish green leaves, and dull green purple spotted flowers. A native of Mexico, imported by Messrs. Loddiges.

Specklinia orbicularis. Lindl. Orbicular Specklinia. *Bot. Reg.* A species resembling the preceding in habit, but with the leaves and flowers more purple. It was imported from Demerara by Messrs. Loddiges. *Bot. Reg.*

TRIBE EPIDENDREÆ. Lindl.

Epidendrum chloranthum. Lindl. Green-flowered Epidendrum. *Bot. Reg.* This is a green-flowered species allied to Encyclia viridi-flora of the *Bot. Mag.* It is a native of Demerara, whence it was sent by Mr. Schomburgh to Messrs. Loddiges. It flowers in March. *Bot. Reg.*

Epidendrum asperum. Lindl. Rough Epidendrum. *Bot. Reg.* This species was first known from dried specimens collected in the western parts of the republic of Colombia by Mr. Cuming, and received its name in consequence of the scape and peduncles being covered all over with hard elevated points. The plant is from the valuable collection of Thomas Harris, Esq., of Kingsbury. The colour of its flowers is of a yellowish brown, with a dull yellow lip neatly streaked with red veins. It is a native of Mexico.

Epidendrum varicosum. Bateman. Varicose-veined Epidendrum. *Bot. Reg.* A small-flowered dull-coloured Epidendrum, having the lip marked with varicose veins in a remarkable manner. It is a native of Guatemala, whence it was imported by J. Bateman, Esq., through his friend Mr. Skinner. *Bot. Reg.*

Epidendrum pachyanthum. Lindl. Fleshy-flowered Epidendrum. *Bot. Reg.* This is a large green-flowered species, sent to Messrs. Loddiges from Guayana by

Mr. Schomburg. Its leaves are thinner and broader than is usual among pseudobulbous epidendra, and a little wavy in the margin. The flowers are fully two inches in diameter, thick and fleshy, dull green, stained with a dirty reddish brown towards the end of the sepals and petals. The labellum is straw colour, streaked along the middle with violet. *Bot. Reg.*

Epidendrum pictum. Lindl. Painted Epidendrum. *Bot. Reg.* This species is nearly related to E. chloranthum, but readily distinguished by its ligulate leaves. Its flowers are dull yellow, striped with crimson. *Bot. Reg.*

Epidendrum Smaragdinum. Lindl. This species is closely allied to E. orchidiflorum, with small bright green flowers, which are hardly distinguishable. It is a native of Demerara, whence it was obtained by Messrs. Loddiges. It flowers in March. *Bot. Reg.*

Physinga prostrata. Lindl. Prostrate Physinga. *Bot. Reg.* *Generic Character.*—Gen. Nov. (Epidendreæ.) Sepala membranacea, æqualia, basi connata. Petala minora, basi sepalis oblique adnata. Labellum carnosum, tuberculatum, indivisum cum basi columnæ connatum, sacco vesiciforme basi auctum, columna carnosa, nana biloba basi imâ antherifera. Pollinia 4 filis duobus geminatis pulvereis adnata. Stigma area minuta, madida, bidentata supra faucem vesicæ. Lindl. *Bot. Reg.*

This is said to be a plant possessing no beauty, but remarkably curious in its structure.

Bletia Havanensis. Lindl. Havannah Bletia. *Bot. Reg.* This species is allied to Bletia Veracunda, but differs in the colour of its flowers, which are much paler, in its unbranched scape; and in the form of its lip, whose crested plates are intercepted about the base of the middle lobe, and bounded on each side by a pair of curved varicose veins. It was introduced from Havannah by Captain Sutton, in the spring of 1835, and added to Sir Charles Lemon's collection at Carclew, where it flowered in March, 1837. *Bot. Reg.*

TRIBE VANDEÆ. Lindl.

Miltonia candida. Lindl. White-lipped Miltonia. *Bot. Reg.* This is another species of this new and beautiful genus. The first species was described and published by us in the 12th Number of the Floral Cabinet, under the name Macrochilus Fryanus, and by Dr. Lindley under the name Miltonia spectabilis, without being aware of each other's name. The sepals and petals of M. candida are of a rich yellowish brown. The labellum is pure white, marked with bright pink in the middle. The flower is nearly three inches in diameter. This charming species is in the fine collection of Messrs. Loddiges.

Brassia macrostachya. Lindl. Long-spiked Brassia. *Bot. Reg.* This species resembles B. caudata. It has been figured by Dr. Lindley in his Sertum Orchidaceum, t. 6. The chief distinction is, the pseudobulbs in B. macrostachya are acute not obtuse at their margins; its flowers are smaller, greener, and much more mottled with deep brown; the labellum is ovate, acuminate, the same length as the petals, instead of being oblong, lanceolate, and longer than the flowers. *Bot. Reg.*

Calanthe discolor. Lindl. *Bot. Reg.* In this species the lip is delicately white, with a few dots of pink near the base. The sepals and petals are on the contrary of a deep reddish brown, and little disposed to be striped. The species of this genus will do well in a greenhouse. *Bot. Reg.*

Calanthe bicolor. Lindl. *Bot. Reg.* The flowers of this species are larger than the preceding, bright yellow inside, and rich orange on the outside, and when spread open they are nearly two inches in diameter. These two species have been figured in Dr. Lindley's Sertum Orchidaceum. Both are small species not at present exceeding a foot in height. *Bot. Reg.*

Calanthe furcatum. Bateman. *Bot. Reg.* This is a white-flowered species, about the same height of the preceding, received by J. Bateman, Esq., from the Luzon Islands, where it was collected by Mr. Cuming.

Cyrtochilum mystacinum. Lindl. *Bot. Reg.* A Peruvian species, which flowered in the stove of R. Harrison, Esq., of Aighbury, in October, 1837. It has a branched stem, like that of an oncidium, bright yellow-coloured flowers, with a most curious fringed and whiskered column. *Bot. Reg.*

MONTHLY SCRAPS.

New Flowers.—Three bulbs have flowered during the last two months at Mr. Knight's nursery at Chelsea, which have attracted much attention. They were brought from Florida by Mr. Henry Knight, and have some of the characteristics of the genus Ismene, but differ in many peculiarities. The flowerstalk springs from the centre of a fine corbeille of foliage, and is surmounted with a beautiful crown of snow-white flowers, of graceful structure, emitting a most delightful and powerful fragrance. One of these bulbs, purchased by Mrs. Lawrence, obtained the large silver medal at one of the exhibitions of the Horticultural Society last spring, as a new and beautiful plant somewhat resembling Pancratium. It is a native of a mud swamp on the banks of the Alabama river, near the city of Mobile, in Florida, where, as we have stated, it was collected by Mr. H. Knight.

Mr. Knight has also, among other novelties, a new Gesneria * now in flower. The flowers are larger and more vivid in colour than 'Splendens,' the scarlet being truly dazzling, insomuch that an artist who was making a drawing from it found the greatest difficulty in conveying any idea of the beauty of the colour. There is besides a striking and distinctive peculiarity of growth; the plant shooting vigorously upward to the commencement of the raceme of flowers, when it turns abruptly downwards at an acute angle. These vagaries of nature appear, in the present state of our imperfect knowledge, inexplicable. This plant would no more grow if trained to an upright position, than one forcibly turned downward from its naturally erect growth. Besides this, a rare plant, Roxburgia Gloriosoides, is just about to blossom for the first time, it is believed, in this country.

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* This Gesneria and the supposed Ismene will be figured in the next Number of the Floral Cabinet.

Adventures of botanical explorers.—We were much interested in Mr. H. Knight's account of many of his adventures in search of botanical novelties in many parts of America. Among others, the account he gave of his discovery of the Ismene described above. It appears that the Alabama river, in the neighbourhood of Mobile, partakes of the nature of a mountain torrent, though running through a flat country; being a rapid and considerable river during the winter months, whilst its bed is comparatively dry during the summer months; leaving, however, vast muddy swamps which are not dried hard till after the hot sun of June has partially baked the surface, when they become sufficiently hard to walk upon, and then they become favourite haunts of the botanist; for it seems that the inhabitants of Mobile are very fond of flowers, which is a strong indication of a more refined intellectual civilization in such a situation than we should be willing to admit without such evidence of its existence. Mr. Knight had found many things to reward his researches in these swamps during the dry season—canes, magnolias, &c. &c., but had deemed it inaccessible at any other time. At last, however, being about to leave that part of the country, he could not make up his mind to do so without another and last visit to the favourite swamp; and although it was in the month of March, and the swamp literally a sea of mud, he was not deterred from carrying his project into execution; and knee deep, and sometimes half way up his thighs, he waded into his favourite 'hunting ground.' His perseverance did not go unrewarded, for he had scarcely advanced into the heart of the swamp, when he beheld it fairly studded over with the clusters of beautiful snow-white flowers (the supposed Ismene), and the whole atmosphere perfumed with their delicious fragrance, on a frosty morning in March. The plants were about two feet high, and he immediately set to work to abstract the prizes from their native mud; but this he found was no easy task, for the bulb frequently lay imbedded full two feet in the mud, so that the entire plant was often four feet high, and in the effort to extract it, he was often sunk nearly hip deep in this unpleasant bath. Malgré these disadvantages, however, he managed to secure from four to five hundred bulbs, several of which he sold to amateurs at Mobile for five dollars each, where, scarcely a mile distant, the plant was totally unknown. The swamp had often been explored when hard during the summer months, but then this flower had dried down and disappeared—its very site being covered with other vegetation. Mr. Knight was the first to venture into the swamp at the only season when it could be seen.

He was not, however, so fortunate in reaping the profit he might expect upon getting the bulbs to England, for, on his voyage to New York, two large chests containing the greater portion of them being upon deck, were swept overboard by a heavy sea, as well as himself, and it was with great difficulty he was saved, whilst the bulbs were totally lost. A few, however, were contained in another package, which safely reached England, and are those, in fact, which we have described as having flowered this spring.

Ericas.—Mr. Cameron's judicious observations upon the cultivation of Ericas are fully borne out by many instances that might be cited, and in many instances where the causes of failure were unknown, but which Mr. Cameron's paper fully explains. At Woburn, for instance, the Ericas are placed in an elevated situation, and the consequences predicted in the paper alluded to are fully exemplified.

CALENDAR OF GARDENING OPERATIONS FOR MAY.

Between the middle and latter end of the month, Dahlias ought to be planted out into the open ground, and well secured with stakes.

Plant out Pelargoniums, Salvias, Verbenas, Fuchsias, Petunias, Anagallises, Senecio elegans-pleno, Heliotropes, and other soft-wooded free-flowering greenhouse plants.

Plant out spare hard-wooded Cape, New Holland, and South American plants in sheltered situations, as all plants of this description will have been killed by the frost during the previous severe winter.

All plants before being removed from the greenhouse to the open ground ought to be gradually hardened by being placed near the glass in an airy situation, otherwise they will receive a severe check by the sudden transition.

Hard-wooded greenhouse plants that have done flowering may be removed to their summer station out of doors, to make room for those in the house still in flower.

Alpine plants that have been protected during the winter in frames may be finally removed to a sheltered and shaded situation.

All hardy Annuals, such as Stocks, China Asters, Zinnias, &c., which have been raised upon slight hotbeds, must now be transplanted into the open ground.

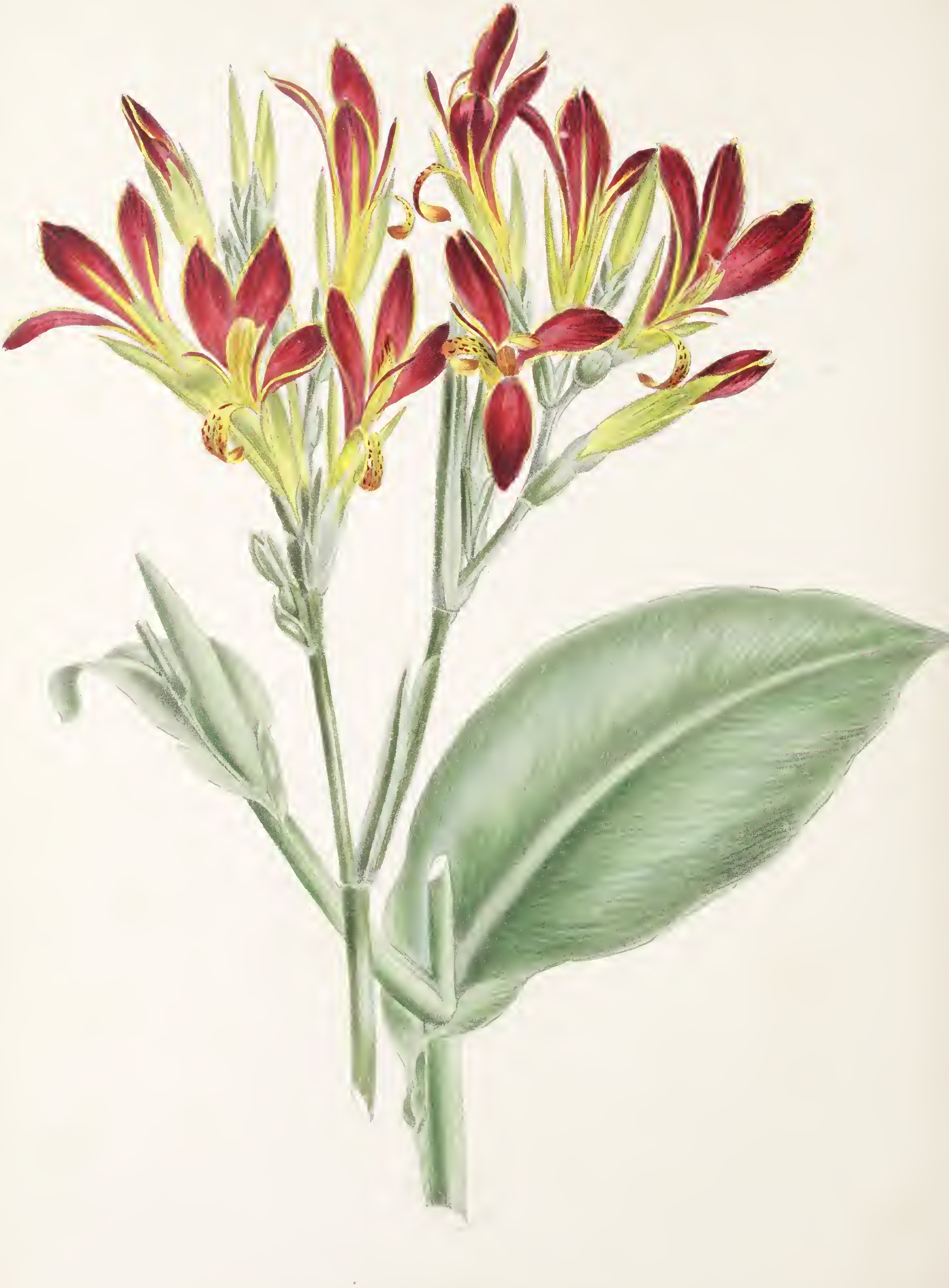
Strike Pansies from cuttings to keep up a succession of healthy, free-flowering plants.

Continue to put in cuttings of greenhouse and stove plants, and also cuttings of Chrysanthemums, and shift into larger pots those plants requiring more room in the houses.

Abundance of air must now be given to the greenhouse during the day, and also during the night in mild weather.

Watering plants in houses ought now to be done after four o'clock in the afternoon, otherwise it will soon evaporate without reaching the bottom of the pots.

Nº 58.



Canna limbata.

Mills delt

J. Graf, Printer to her Majesty

CANNA LIMBATA.

(*Bordered-petaled Canna.*)

LINNEAN SYSTEM.	NATURAL ORDER.
MONANDRIA MONOGYNIA.	MARANTACEÆ.—(*Lindl.*) CANNEÆ.—(*Brown.*)

GENERIC CHARACTER.

Canna (Lin.) *Anthera* simplex, filamenti margini adnata. *Stylus* crassus, claviformis. *Stigma* obtusum. *Capsula* trilocularis. *Semina* globosa, numerosa.—(*Rœmer et Schultes Syst. Veget.*)

Anther simple, joined to the margin of the filament. *Style* thick, club-shaped. *Stigma* obtuse. *Capsule* three-celled. *Seeds* round, numerous.

SPECIFIC CHARACTER.

C. Limbata; corollæ limbi interioris labio superiore tripartito; laciniis emarginatis, crenatis; unguibus longis; labio inferiore bifido declinato.—*Roscoe MSS.*

The upper lip of the interior limb of the corolla divided into three parts; the divisions notched at the end, and crenate; claws long; the lower lip divided into two parts, and bending down.

Canna limbata.—*Roscoe, Bot. Reg.* t. 771.

C. auro-vittata.—*Loddige's Bot. Cab.*

Descr.—*Stem* from four to six feet high, which, together with the leaves, is of a soft and pleasing glaucous green colour. *Leaves* ovate, lanceolate, acute, surrounded with a white cartilaginous margin, sheathing at their base to the depth of from two to four inches. *Flowers* in a corymbose panicle, numerous, the upper lip of which is of a brilliant crimson colour, bordered with golden yellow; the lower lip is revolute, yellow, spotted with crimson, divided at the apex. *Capsule* globular, in its immature state covered all over with angular fleshy protuberances, three-celled, dehiscing longitudinally. *Seeds* round, black, each cell containing one to four, and adhering to numerous fibrous placentæ.

This beautiful species of Canna was figured from a plant in the collection of the Birmingham Botanical and Horticultural Society, and was raised from seeds presented to that establishment by C. R. Cope, Esq., of Edgbaston, who received them from Brazil.

It is a plant of stately growth, of elegant appearance, and will be very ornamental to any stove collection into which it may be introduced, as its flowers continue for some time, and are produced at almost all seasons of the year.

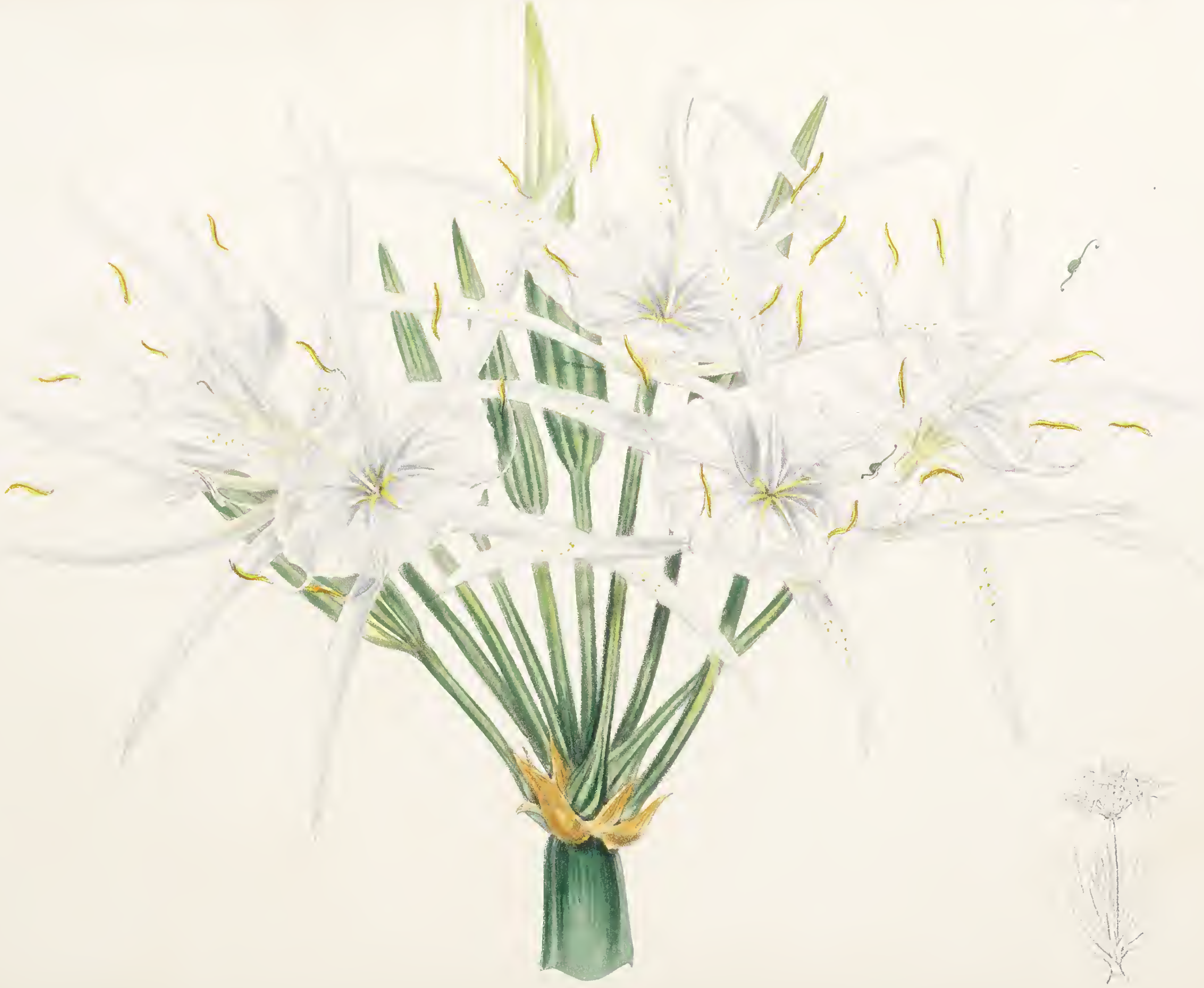
The best soil is rather strong, but porous loam, mixed with one-third part of well-rotted dung. It may be readily increased by the division of the roots, and also by seeds.

It may be interesting to those of our readers who have gardens, and who are anxious, of course, to have them decorated with showy plants, and in as great variety as possible, to be informed that many species of Canna may be planted into the open ground in June, if they have been previously and gradually hardened. In such situations they will not only succeed remarkably well, but will frequently endure mild winters. In order to fit them for such a transition, they should be removed some time previously to flowering, from the stove to the greenhouse, and, if practicable, to the frame-pit. They should, when planted out for such purposes, be placed in a warm south situation, where they are sheltered from both the north-east and west winds.

The natural order to which *Canna* belongs, is *Marantaceæ*, or the arrow-root tribe, the fleshy roots of which abound in a nutritive fæcula, which is highly esteemed as a mild and delicate article of food. It is obtained not only from *Maranta Arundinacea* (the original species), but from several other species in the East and West Indies. The fleshy roots of some of the Cannas are also said to be eaten in Peru. The juice of *Maranta Arundinacea* is reported to be very efficacious in the cure of wounds inflicted by the poisoned arrows of the Indians; whence its name.

The plants of this order are closely allied to the *Scitamineæ*, or *Zingiberaceæ* (the ginger tribe), with which they were formerly united. They differ, however, not only in some important points of structure, but also in their properties. The roots of all of them are fleshy, and contain abundance of nutritive fæcula; but while, in the ginger tribe, it is combined with a warm aromatic principle, for which it is highly valued; the arrow-root tribe is remarkable, on the other hand, for the total absence of that principle, and is esteemed accordingly. For these reasons they have been separated into two distinct tribes, as originally proposed by Dr. Brown. A splendid monograph was devoted to these plants by the late Mr. Roscoe.

They are natives, chiefly, of the Tropics. By far the greater number are found in the East, some in the West Indies, some in Africa, and some in Tropical America.



Ismene Knightii

ISMENE KNIGHTII.

(*Mr. Knight's Ismene.*)

LINNEAN SYSTEM.	NATURAL ORDER.
HEXANDRIA MONOGYNIA.	AMARYLLIDACEÆ.

GENERIC CHARACTER.

Ismene (Salisbury). *Perianthium* 6-partitum, laciniis angustis, linearibus, patulis; *tubus* curvatulus, cylindricus; *corona* staminifera; *filamenta* conniventia deflexa; *antheræ* modicæ infrà medium affixæ pendulæ; *semina* rotunda.—(*Herbert.*)

Perianth 6-parted, segments narrow, linear, spreading; *tube* a little curved, cylindrical; *crown* bearing the stamens; *filaments* deflexedly conniving; *anthers* moderate in size, attached immediately below the middle, pendulous; *seeds* round.

SPECIFIC CHARACTER.

I. Knightii; *foliis* 8 vel 10, lineari-oblongis subacutis striatis basi carnosis dilatatis vix vaginantibus; *scapo* ancipiti subcompresso striato 10-12 floro foliis longiore; *germine* sessili inequaliter trigono angulis obtusis, loculis 1-2 spermis; *spathâ* lanceolatâ sphacelatâ; *tubo* viridi subtrigono; *limbi* laciniis lineari-lanceolatis; *coronâ* patulâ rotatâ margine dentato-eroso; *stylo* filiformi subtrigono suprà viridi; *stigmate* obtuso.

Leaves 8 or 10 linear-oblong, rather acute, striated, fleshy and dilated at the base, scarcely sheathing; *scape* 2-edged, rather compressed, striated, 10-12 flowered, longer than the leaves; *germ* sessile, unequally three-cornered, with obtuse angles, and cells with 1-2 seeds; *spathe* lanceolate, withered; *tube* green, rather three-cornered; segments of the *limb* linear-lanceolate; *crown* spreading, rotate, with an irregularly-toothed margin; *style* filiform, slightly three-cornered, green above; *stigma* obtuse.

Descr.—*Leaves* from fifteen to twenty inches long, somewhat erect, from eight to ten in number, and ranged around the *flower-stem*, which rises from the centre of the bulb, bearing an umbel of from ten to twelve flowers; segments of the *perianth* more than twice the length of the crown; *filaments* more than twice the length of the anthers; *style* scarcely equal to the perianth; *flowers* of a snowy whiteness, exhaling a powerful and most delightful fragrance.

The graceful form of this new and interesting plant, the dazzling whiteness of its flowers, and the delicious odour which they emit, will, doubtless, render it a universal favourite. It is in the fine collection of Mr. Knight, of King's Road, Chelsea, where our drawing was made in March last. It is a native of Florida, where it was found in March 1836, by Mr. Henry Knight, growing in a swamp watered by the Alabama river, and within a mile of the city of Mobile.

When found it was in full bloom, and the swamp in which it grew was completely studded over with its umbellate clusters of flowers, and the whole atmosphere was perfumed with their delicious fragrance. For some additional and very interesting particulars respecting the discovery of this plant, we beg leave to refer our readers to the "Monthly Scraps" of our last number, furnished by an esteemed correspondent, to whom they were directly communicated by Mr. Henry Knight.

After a careful examination of the plant in question, we cannot consider it to be generically distinct from *Ismene*, although it presents some few (but by no means important) points of difference; in the size of the anther, in its point of attachment, as well as in some other characters by which, according to Mr. Herbert, Ismene is distinguished, our plant is decidedly an Ismene, of which it will form a new and most desirable species. We shall be anxious to ascertain whether the seeds of this plant will be found to exhibit the same peculiarity in their mode of germination as those of the other known species of Ismene. "The seed of Ismene," says Mr. Herbert,* "vegetates immediately in a remarkable manner, forming a bulb as big as itself (sometimes much bigger), far under ground, without pushing any leaf. As soon as the seed rots, the young bulb must be left without water till the next spring. A person unaware of the peculiarity of this genus and *Choretis*, when he found the seed rotten, would be likely to throw away the earth, without suspecting the formation of the bulb near the bottom of the pot."

The genus Ismene is closely allied to Pancratium, from which it has been separated on account of some peculiarities of structure by which they may be severally distinguished, but upon which we have not space at this time to dwell. It was so named by Salisbury from Ismene, the daughter of Œdipus and Jocasta.

As regards the treatment of the different species of Ismene, Mr. Herbert observes, that "absolute rest in winter is essential to this genus, which delights in very light sandy soil; its cultivation is easy when those two requisites are observed." We are not acquainted with Mr. Knight's treatment of this particular species, but, as it flowers in March, its season of repose must be during the summer months. Many of the American bulbs are found to thrive well and flower freely, if watered rather copiously as soon as the leaves appear; when the flower-scapes begin to show themselves they should be placed in a pan of water. Judging from the state of the swamp in which the present plant was found, we should have no doubt of its succeeding well under similar treatment.

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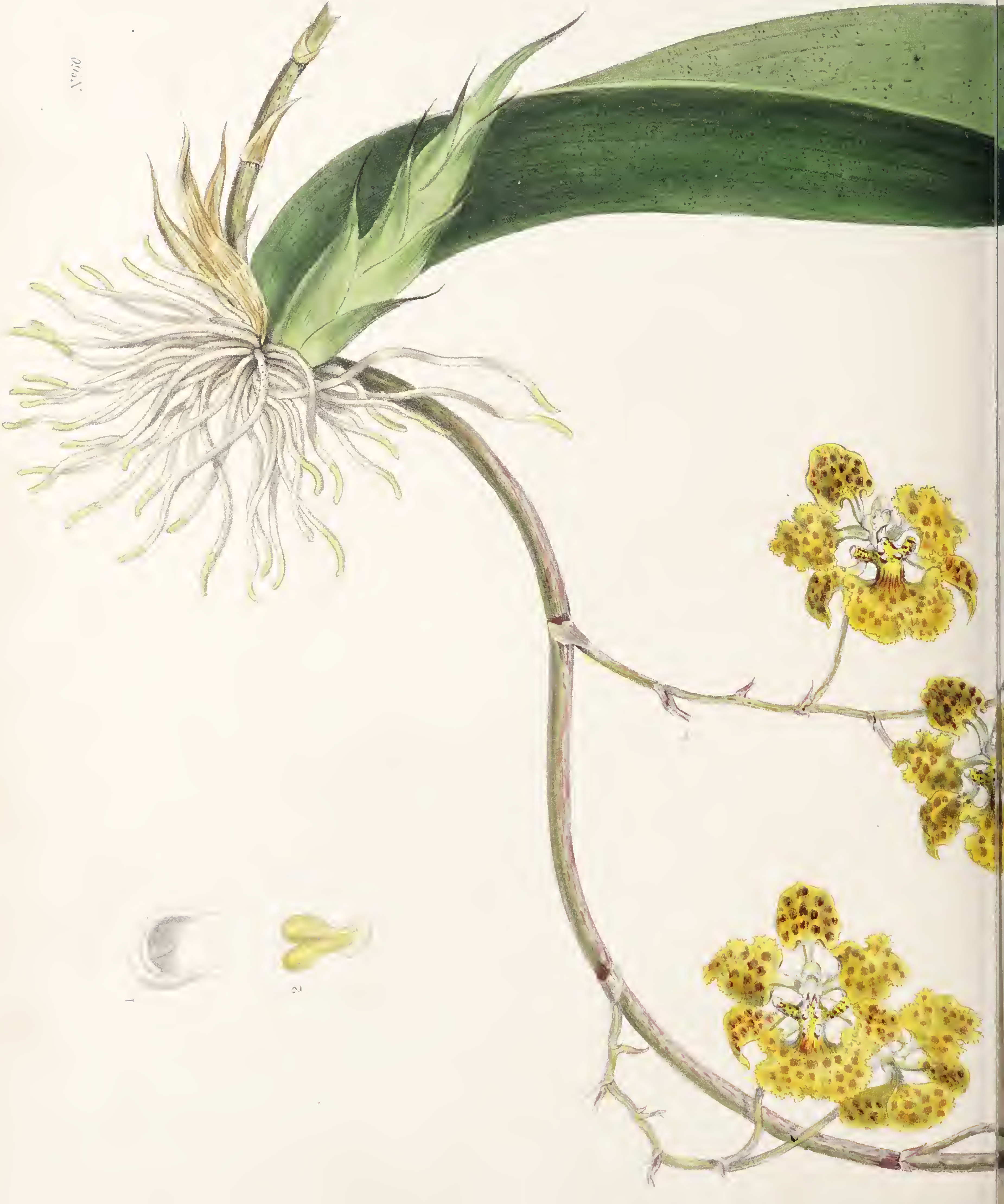
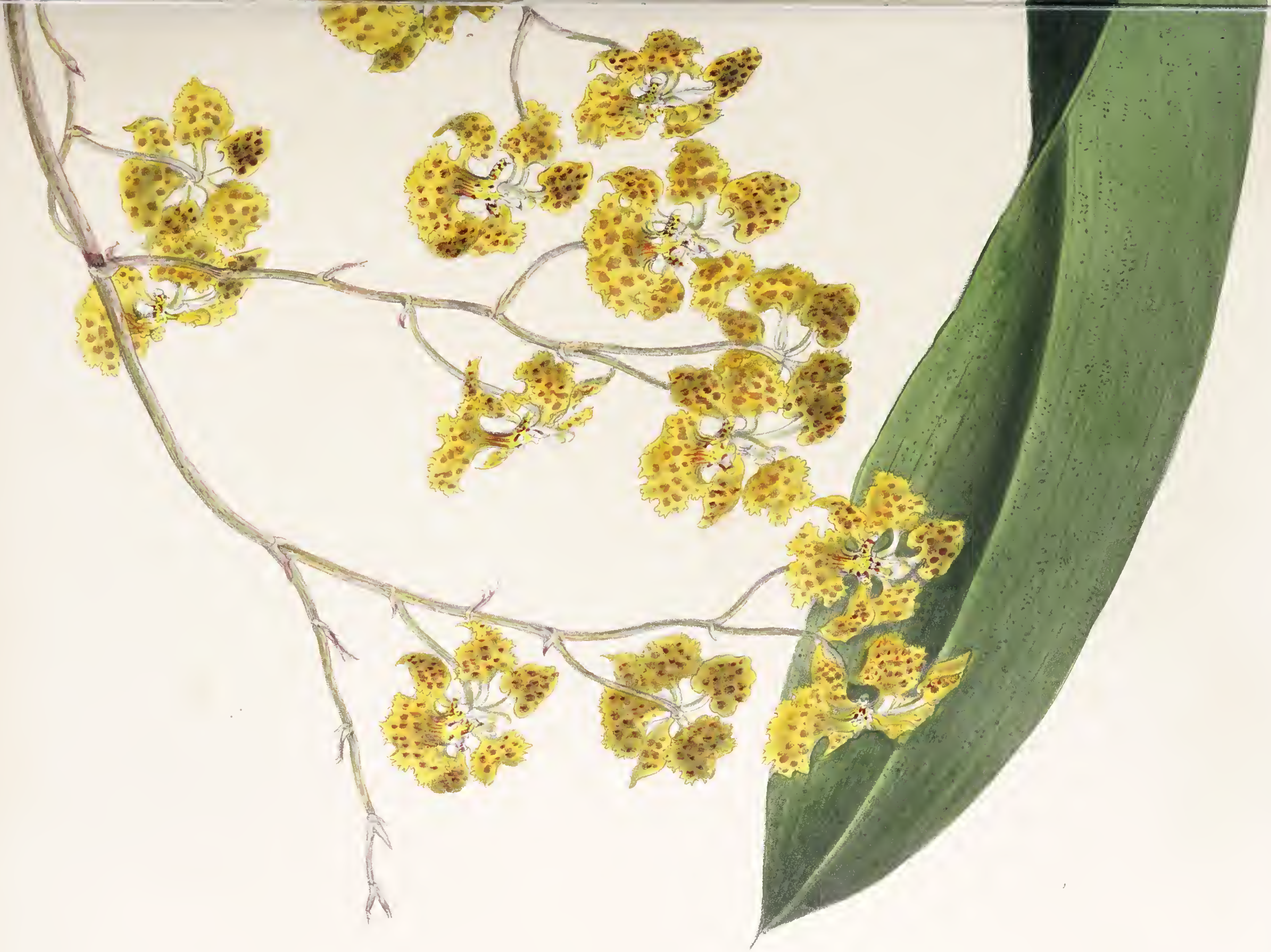
* Amaryllidaceæ. By the Hon. and Rev. W. Herbert.

N°10





W. Green del.

Oncidium intermedium.

J. Graf, Printer to her Majesty.

ONCIDIUM INTERMEDIUM.

(*Intermediate Oncidium.*)

LINNEAN SYSTEM.	NATURAL ORDER.
GYNANDRIA MONANDRIA.	ORCHIDACEÆ, § VANDEÆ.

GENERIC CHARACTER.

Oncidium (Swartz). *Perianthium* explanatum. *Sepala* sæpius undulata; lateralibus nunc sub labello connatis. *Petala* conformia. *Labellum* maximum, ecalcaratum, cum columnâ continuum, variè lobatum, basi tuberculatum vel cristatum. *Columna* libera, semiteres, apice utrinque alata. *Anthera* semibilocularis, rostello nunc abbreviato, nunc elongato rostrato. *Pollinia* 2, posticè sulcata, caudiculâ planâ glandulâ oblongâ. Herbæ *epiphytæ*, nunc pseudobulbosæ. *Folia* coriacea. *Scapi* paniculati vaginati, rariùs simplices. *Flores* speciosi, lutei, sæpiùs maculati, raró albi.

Perianth explanate. *Sepals* more frequently undulate; the lateral ones sometimes connate beneath the labellum. *Petals* similar in form. *Labellum* very large, spurless, continuous with the column, variously lobed, tuberculated or crested at the base. *Column* free, semiterete, with the apex winged on both sides. *Anther* half 2-celled, rostellum sometimes short, sometimes elongated, beaked. *Pollen-masses* 2, furrowed behind, with a flat caudicula and an oblong gland. *Epiphytic* plants, sometimes with pseudobulbs. *Leaves* leathery. *Scapes* panicled, sheathed, more rarely simple. *Flowers* handsome, yellow, most frequently spotted, rarely white.

SPECIFIC CHARACTER.

O. Intermedium; *foliis* oblongis acutis rigidis carnosis; *scapo* flexuoso paniculato ramoso multifloro; *sepalis* undulatis unguiculatis subintegris supremo rotundato subcochleato lateralibus spatulatis subreflexis; *petalis* latè unguiculatis subrotundatis crenulato-crispis; *labelli* lobis lateralibus nanis revolutis intermedio reniformi undulato emarginato; *crista* posticè lobis 2 crassis tuberculatis, anticè callis tribus intermedio elevato elongato lateralibus divergentibus; *columnæ* alis carnosis obliquis, suprà margine repando-sinnato, infrà auriculâ elongatâ.

Leaves oblong, acute, rigid, fleshy; *scape* flexuose, panicled, branched, many-flowered; *sepals* undulated, clawed, somewhat entire, the upper one rounded, somewhat cochleate, the lateral ones spatulate, a little reflexed; *petals* broadly clawed, somewhat rounded, crenulate, and slightly curled; lateral lobes of the *lip* small, revolute, middle lobe reniform, undulate, emarginate; *crest*, posteriorly with two thick tuberculated lobes, anteriorly with three callosities, the middle one elevated, elongated, the lateral ones diverging; wings of the *column* fleshy, oblique, with a slightly sinuous margin above, and terminating below in an elongated auricle.

Descr.—*Leaves* from fifteen to thirty inches long, and from four to five inches broad; *scape* from four to five feet long, with short, acuminate, distant bractes, sheathing at the base; *flowers* of a dull brownish orange, spotted with rich brown; *lateral lobes* of the lip rolled back, and forming two horn-like tubes; *crest* posteriorly with two thick tuberculated lobes, the interior portions of which are yellow, the exterior white, between which arises a sharp, elevated, callous ridge, yellow at its commencement, and white at its termination in the claw of the lip, on each side of which is a white diverging fleshy auricle; *pollen-masses* sulcated posteriorly, fixed upon the lunated margin of a broad *caudicula*, the horns of which lie in contact with them; the lower portion is ventricose, and embraces the anterior half of a thick, round, compressed gland; wings of the column white.

For an opportunity of figuring this magnificent epiphyte we are indebted to George Barker, Esq., of Springfield, near Birmingham, in whose stove it flowered in March last. It is a native of Cuba, from whence it was sent to Mr. Barker by Don Domingo de Goicouria, a merchant of Havannah.

It is closely allied both to *O. carthaginense*, and *O. luridum*, but appears to us to be sufficiently distinct from each of those species. It approaches *carthaginense* in the cochleate form of the upper sepal, in the arrangement of the anterior portion of the crest, and in the sinuous, oblique wings of the column. It differs from that species in the shape of the lateral sepals, which are obtuse (not acute), as well as of the petals, which are entire (not lobed), and in the lateral lobes of the lip, which are rounded and revolute (not acute and recurved). On the other hand, it resembles *luridum* in its very obtuse petals, and in the dwarf lateral lobes of the lip; while it differs from it in the obtuse (not acute) lower sepals, in the completely revolute lobes of the lip, in the shape and colour of the tubercles of the crest, and in the much brighter colour and more distinct markings of the flowers. Its leaves, also, are not so thick and fleshy, and by no means so strongly and prominently keeled as are those of luridum.

It forms a most conspicuous ornament in the stove, and requires the treatment usually adopted with other tropical orchidaceæ, viz., to be kept in a warm, moist stove when growing, but more cool and dry when in the dormant state.

Fig. 1, anther case; 2, pollen-masses, gland and caudicula.

ON CLIMBING PLANTS.

The term climbing is applied by gardeners to all plants which, from the weak and flexible nature of their stems, are obliged to attach themselves to any objects within their reach for support. The mode in which this attachment is effected varies greatly in different plants, and is expressed in the language of botany by different terms indicative of their several peculiarities. Thus the stem of the Ivy (*Hedera helix*) throws out from one side a number of root-like processes, which insert themselves into the crevices of trees, rocks, or walls, and thus enables the plant to elevate its foliage and fructification sufficiently high to be exposed to the influence of the sun and air.* The ash-leaved trumpet-flower (*Bignonia radicans*) presents another instance of this peculiar mode of climbing, whence it has received its specific name, *radicans*.

The stems of those plants to which the term *climbing*, or *scandent*, is more particularly applied by botanists, are furnished with those curious, spiral appendages, called tendrils, which they twine around the branches of stronger plants, and by which they are enabled, in some instances, to support, far above the ground, a considerable weight of fruit. The Vine (*Vitis vinifera*), and the different species of Passion-flower (*Passiflora*), offer familiar examples.

A third mode by which plants are enabled to climb, is by the *twining*, or *voluble* nature of their stems, which they wind spirally around any upright plants, or such other objects as they are able to approach. Here the plant is not supported by root-like fibres, as in the *Ivy*, nor by tendrils, as in the *Vine*, but simply by its own convolutions. These convolutions are governed in their direction by certain, invariable laws. Thus in the common Hop (*Humulus lupulus*), the twining is from left to right; while in the Kidney-bean (*Phaseolus multiflorus*), it is from right to left; and this tendency is so natural and so irresistible in all plants of the same species, that any attempt to reverse it invariably fails; for each plant will again assume its peculiar direction, and if constantly thwarted in its natural tendency, will soon become sickly, and eventually perish.

Such are the climbing plants, as distinguished by botanists, many of which possess great beauty in themselves, and are often in the highest degree ornamental to the trees and shrubs round which they cling for support. The British Isles furnish many kinds of climbing plants, some of which are truly elegant; as the Convolvulus of the Hedges (*Calystegia sepium*), and the Wood-vetch (*Vicia sylvatica*); but to have a just conception of their grandeur and magnificence, we must view the forests of Tropical regions. We see them in our own country with slender stems, attaching themselves to bushes, hedges, and the lower branches of trees, and seldom, except in a few instances, exceeding the height of a few feet. But in the Tropics they assume a more gigantic character, towering to the summits of the loftiest trees, spreading from branch to branch, and thus binding firmly together the most extensive forests. Staunton, in his account of his embassy, says :—" It was difficult to get far into the Java forests from the quantity of underwood, and the vast number of creeping plants, which form a sort of net, supported by other trees, and are impassable without an instrument to cut them. Some of them were likewise of great strength. One trailed along the ground, in the manner of some of the Convolvulus kind, with a stalk about an inch in diameter throughout, and of a length exceeding a hundred feet."

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* Ivy, as seen growing on level ground, or creeping along the bottoms of hedges, or in any situations where it is not allowed to ascend, is never found in fructification.

Stedman also gives a most interesting account of the forests of Surinam, and the voluble plants peculiar to that region ; which he describes as ascending to the tops of trees, whence they again descend till they reach the ground, then strike root, again ascend the nearest trees, and thus continue in endless succession to spread in all directions. Some he describes as resembling ropes of various dimensions, which not unfrequently twine around each other till they form ropes as thick as a ship's cable. Others are so crossed and interwoven as to bear no small resemblance to fishing nets. Bartram, in his Travels, describes the climbing plants of the forests of Georgia and Carolina as forming the most beautiful garlands and festoons, and affording to the traveller the most enchanting shades.

Having given this hasty sketch of climbing plants, we shall endeavour, in a future paper, to point out such of the more ornamental kinds as are to be met with in cultivation in this country, and the purposes to which they may be most appropriately applied in fancy-gardening.

ON THE ARTIFICIAL IMPREGNATION OF FLOWERS.

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

Artificial impregnation of some plants that are shy in producing seeds is essentially necessary, with a view of ensuring a supply to perpetuate the species ; particularly of some annuals and biennials, and some shrubby New Holland plants that are difficult of propagation from cuttings. Artificial impregnation is readily effected by taking a fine camel-hair pencil and brushing it slightly over the mature anthers that are burst open, until the hairs of the pencil become coloured with the pollen, which must then be applied to those stigmas that are in a mature state : when some of the pollen is seen adhering to the stigma, the operation is complete. This may be performed on any dry day, from nine o'clock until three or four. The whole process occupies but a short time, and a careful observer will soon perceive its beneficial effects by the swelling of the capsules of those flowers that have been impregnated.

For the purpose of obtaining new hybrid varieties between any two species of the same genus, the process is more tedious, and requires, in order to obtain a good variety, a judicious selection of two species, which, if blended together, are likely to produce one superior to either. The first part of the process is, to cut out the anthers before bursting from that flower which is intended for the female parent; and when the stigma is ripe, to impregnate with pollen taken from the species which has been selected as the male parent. It is sometimes necessary to cover the impregnated capsules with fine gauze, to prevent any injury to the capsules from the depredation of insects, rather than to prevent the pollen from being carried to the stigma from other plants, which is not likely to do any injury after impregnation has taken effect. Where many hybrids have already been obtained of any genera, new hybrids are still more readily obtained by crossing these amongst themselves, as has been done successfully in fruits and vegetables, with progressive improvements, by T. A. Knight, Esq. and others. Great and rapid improvements are also making every year in obtaining new varieties of Pelargonium, Camellia, Cactus, Dahlia, Calceolaria, Dianthus, Primula, Viola, &c. Many are now obtained by chance, where the varieties are numerous, by sowing their seeds without having been at any trouble in using cross impregnation; while, during the time the varieties of the same genera were more limited, it required great care to obtain a few, and these only indifferent varieties, compared with what may now be obtained without any trouble whatever. While artificial impregnation is resorted to for the improvement of varieties, that of improving them by superior cultivation ought by no means to be neglected.

ON LIQUID MANURE.

Manure is an article of great importance to the agriculturist, the horticulturist, and the florist; yet, notwithstanding its importance, the subject seems not to have received that attention of which it is deserving. Until the year 1802, when Sir H. Davy was requested to deliver before the Board of Agriculture a series of lectures on agricultural chemistry, and of which manure formed a very important part, little could be said philosophically to be known on the subject; and although much has been written, and many new discoveries made since that period, the work of Sir H. Davy will always remain a standard work of philosophical investigation.

It is not our intention at present to go extensively into the subject of manure, but merely to confine ourselves to practical remarks on liquid manure; and shall be obliged to some of our readers if they will favour us with additional observations from practical experience. Liquid manure is of essential service as a top-dressing in agriculture at all seasons of the year, and at any period of the growth of the plants is a most desirable application ; as other descriptions of manure can only be used at that period of the year at which it can be turned in either with the plough or spade, if we except grass lands, and then can only be used beneficially as a top-dressing during the winter or early in the spring, otherwise the sun and air would soon absorb all its virtues.

The beneficial effects of liquid manure in agriculture were known to Columella, who lived in the reign of Claudius, and who has stated that if fruit trees are watered with such liquid, the fruit is not only better flavoured, but in greater abundance. The same also has been said by Palladius of the vine, and Mortimer has stated that the rennet apples of Kent were degenerating in consequence of their not being watered with urine. Liquid manure is very much used in the German part of Switzerland for watering their meadows; and indeed agriculturists in this country begin to understand the beneficial effects of it, as it is not suffered to run to waste as formerly.

Notwithstanding the beneficial effects which it produces in agriculture, we believe it has not received that attention either in horticulture or floriculture of which it is deserving. We had some two or three years ago an interview with the late talented and indefatigable horticulturist, T. A. Knight, Esq., President of the Horticultural Society, when we introduced the subject of liquid manure, at which time he stated that he considered it an excellent application for the forcing of strawberries, and that at present little or nothing was known of its beneficial effects in extensive horticultural pursuits, and in that we most cordially agree. We therefore do hope that some practical horticulturist and floriculturist will take up the subject, and let the public have the benefit of their experiments.

In detailing such experiments, it will be necessary to state from what source the manure has been obtained, as different manures possess different stimulating properties beneficial to some plants, and injurious to others; and also to state its specific gravity when used. Information on these points will be most essentially necessary.

Some few years ago Mr. Cameron, Curator to the Birmingham Botanical and Horticultural Society, made experiments on the effects of liquid manure obtained from pigeon's, fowl's, sheep's, and deer's dung mixed together. They were kept dry until wanted for use, by which means their virtues were better preserved than if they had been kept in a moist state.

The proportions used by him were as follows:—To forty gallons of water he put half a peck of the above manure mixture, and let it stand for twenty-four hours, after which time it was fit for use.

This mixture he found particularly beneficial to some sorts of plants cultivated in pots, particularly those whose roots possessed strong spongioles, such as Balsams, Pelargoniums, Chrysanthemums, Mimuluses, Fuchsias, Salvias, and Pansies. Its beneficial effects upon plants possessing such roots he considered to be owing to its hot nature destroying the tender points of the spongioles; and that the stimulus given to the soil caused fresh spongioles to spring out from around those destroyed, in the short space of a day or two. By these means the feeders of the plants were increased at every successive watering. It ought however to be stated that he found its beneficial effects were not universal; and that if he had used it indiscriminately it would have been certain destruction to some tribes of plants, particularly those with fine fibrous roots, such as the Epacrideæ, Ericaceæ, and Rhodoraceæ; and, according to the experiments then tried, it would also have had a similar effect on all plants potted in *peat.*

Cow urine, as a manure, is the most powerful of all the manures we are at present acquainted with, and should be used with the greatest caution; for if diluted with four parts of water, we have seen much injury arise even by watering with it the Brassica tribe. But notwithstanding the great caution requisite when used for watering *plants*, it may nevertheless be used with great advantage in agriculture and horticulture, by being spread over the soil before or after digging or ploughing, and, of course, before the ground is either sown or planted.

We consider the beneficial effects of liquid manure to be comparatively but little known, although it is without doubt one of the most valuable articles in husbandry. We would, therefore, again invite the attention of practical persons to the subject, being fully convinced that those who have it in their power to prosecute the inquiry, might benefit the community in the manner we have before stated. It might be right to mention the tribe of plants on which it has been used, whether in horticulture, agriculture, or floriculture; and we do not doubt, if such experiments were persevered in, that millions of gallons that are now running to waste would be used with immense advantage, and by which the whole community would be benefited.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

RANUNCULACEÆ. Juss.

Clematis florida, *var.* bicolor. Lindl. Siebold's Clematis. *Bot. Reg.* N. S. t. 25. This is a beautiful plant, with yellowish white sepals and purple petals, forming an elegant contrast. It is the plant which is known in gardens by the name of C. Sieboldi, but which Dr. Lindley does not think differs from C. florida, except in the brightness and clearness of its flowers, and more robust growth. As a climber, it will be much prized by those who delight in such decorations, and is about as hardy as C. florida.

It grows freely in any good loamy soil, and may be increased by either layers or cuttings. It is in the possession of Messrs. Lowe, of Clapton. *Bot. Reg.*

PITTOSPOREÆ. Brown.

Billardiera daphnoides. Daphne-like Billardiera. B. daphnoides; fruticosa; *ramis* non scandentibus; *foliis* lanceolatis subacutis suprà glabris subtùs sericeo-villosis; *floribus* pedicellatis solitariis axillaribus luteis; *antheris* sagittatis; *stigmatibus* obtusis quadripartitis; *baccis* sericeis.

This is a very distinct and interesting species of Billardiera, and flowered for the first time this spring. It is not scandent, and to all appearance will prove to be a dwarf rigid shrub. The branches are covered with hairy down. The upper part of the leaves is of a dark-green colour, their under surface is densely covered with whitish silky hairs. The calyx is exteriorly hairy, and pinky at the edges. The flowers are smooth, interiorly yellow, exteriorly striped with a dullish purple. The anthers are brown, small, and sagittate. The ovarium silky.

This species is in the collection of the Birmingham Botanical and Horticultural Society, and was presented by a gentleman at the first formation of the Society.

LEGUMINOSÆ. Juss.

Acacia cultriformis. A. Cunningham. Coulter-formed Acacia. *Bot. Reg.* N. S. p. 39. A charming conservatory plant, bearing quantities of clusters of yellow flowers, and glaucous half-rhomboidal leaves. *Bot. Reg.*

PHILADELPHEÆ. D. Don.

Philadelphus triflorus. Wallich. Three-flowered Philadelphus. *Bot. Reg.* N. S. p. 35. This rare species was raised from seeds obtained from the Himalaya mountains, by Dr. Royle, and lately flowered, imperfectly, in the garden of the Horticultural Society of London. It has the habit of P. laxus, and is slightly fragrant. It will probably prove quite hardy; and is no doubt distinct from P. tomentosus, from the same country, which more resembles P. grandiflorus. *Bot. Reg.*

CACTEÆ. Juss.

Cereus pentalophus. V. subarticulatus. Five-winged Cereus, somewhat jointed variety. *Bot. Mag.* t. 3651. This is a very delicate rose-coloured species, from the collection of Mr. Mackie, of Norwich. The germen is as prickly as the stem. *Bot. Mag.*

COMPOSITÆ. Vaill.

Echinacea Dicksoni. Lindl. Mr. Dickson's Echinacea. *Bot. Reg.* N. S. t. 27. This is a very showy herbaceous perennial, raised in the garden of the Horticultural Society of London, from seeds presented by George Frederick Dickson, Esq. It is nearly related to E. heterophylla, but is a much prettier species, by not having the coarse viscid hairs which clothe all the green pents of that plant. It is difficult to propagate unless by seeds, which should be sown about the end of March, in a rich soil, on a nearly-exhausted hot-bed, and treated like those of half-hardy perennials. *Bot. Reg.*

SCROFULARINEÆ. Juss.

Diplacus puniceus. Nutt. Scarlet-flowered Diplacus. *Bot. Mag.* t. 3655. This is a very elegant shrub, flourishing in its native soil nearly the whole year. This is a genus made from the genus Mimulus, of which M. glutinosus is one of the species.

This species was discovered by Mr. Nuttall in his western travels, and transported in the year 1836 to the garden of Mr. Buist, an extensive nurseryman at Philadelphia, by whom the whole stock was sent in the autumn of last year to Messrs. Lowe, Clapton, who, consequently, are the only possessors; and, owing to the severity of last winter, most of the plants perished. There are at present only four species known. *Bot. Mag.*

MONOCOTYLEDONES.

LILIACEÆ.

Ornithogalum montanum. Tenor. Mountain Ornithogalum. *Bot. Reg.* N. S. t. 28. This is a pretty species of Ornithogalum, sent to Dr. Lindley by W. F. Strangways, Esq., from his choice collection at Abbotsbury.

It is said to differ from O. garganicum, in its leaves being never ciliated, its more corymbose flowers, spreading peduncles, and flowers green externally, with the edge only of the segments white; from O. umbellatum, by the bulbs of that species being proliferous, the leaves linear, channelled, and longer than the scape; also from O. comosum, by its flatter leaves. It grows best in a rich loam kept rather dry in the winter. *Bot. Reg.*

ASPHODELEÆ. Juss.

Stypandra frutescens; frutescens, caule compresso, foliis distichis, lineari-lanceolatis acutis vaginatis basi recurvis; floribus subcorymbosis cœruleis.

This species of Stypandra is distinct from all the species of Stypandra we are acquainted with, in being frutescent. It grows about three feet high. The stem is compressed, and the leaves are linear, lanceolate, much resembling grass. The flowers are of a delicate blue colour, arranged in a kind of corymb.

It is in the collection of the Birmingham Botanical and Horticultural Society. We shall give a figure and a further description of it in a forthcoming Number.

ORCHIDACEÆ. TRIBE MALAXIDEÆ.

Octomeria gracilis. Lod. Slender Octomeria. *Bot. Reg.* N. S. p. 36. An inconspicuous species, having flowers like those of O. Baueri, but smaller, with a differently shaped lip, and with very narrow-channelled, recurved leaves. It was received by Messrs. Loddiges from Rio Janeiro. *Bot. Reg.*

§ DENDROBIEÆ.

Cirrhopetalum cæspitosum. Wall. Cæspitose Cirrhopetalum. *Bot. Reg.* N. S. p. 35. A small Epiphyte, in the collection of his Grace the Duke of Devonshire, at Chatsworth. It has small, pale yellow-ochre-coloured flowers. It is not showy. *Bot. Reg.*

Dendrobium candidum. Wall. White Dendrobium. *Bot. Reg.* N. S. p. 36. This species was found by Mr. Gibson, his Grace the Duke of Devonshire's collector in India, at Nungelow, on the north side of the Khoosea Hills, growing on rocks, sand, and decayed trees. The flowers are pure white and most exquisitely scented. It has the habit of D. nobile in being erect, not pendulous, as in D. pierardi and that race. The stems are about a foot long, and lose the principal part of their leaves before flowering. *Bot. Reg.*

§ EPIDENDREÆ.

Epidendrum cucullatum. Lindl. Cucullate Epidendrum. *Bot. Reg.* N. S. p. 33. A species of no beauty. The flowers are small, and white at the top of a leafy stem of about nine inches high. The anther is remarkable, by being inserted far below the apex of the column, in which respect it approaches the genus Physinga. It is a native of Para, and imported by R. Harrison, Esq., of Liverpool. *Bot. Reg.*

Epidendrum longicolle. Lindl. Long-necked Epidendrum. *Bot. Reg.* N. S. p. 34. This species is nearly allied to E. nocturnum, but much less handsome. The sepals and petals are pale yellow; the lip white, with two yellow plates at the base. It was received from Demerara by Messrs. Loddiges. *Bot. Reg.*

Epidendrum altissimum. Bateman. Tall Epidendrum. *Bot. Reg.* N. S. p. 38. This species was found by Mr. Skinner in the rocky parts of the Bahamas, and received by Mr. Bateman in the summer of 1837. This species has a powerful odour resembling bees-wax. It is also in the collection of Messrs. Rollisons. It is very like to E. Oncidioides, *Bot. Reg.*, from which its long pseudobulbs, gigantic stature, and labellum, alone distinguish it. *Bot. Reg.*

Epidendrum ochraceum. Lindl. Yellow-ochre-coloured Epidendrum. *Bot. Reg.* N. S. t. 26. This is a pretty plant, and inhabits several parts of tropical America. It was gathered in Guatemala, by George W. Skinner, Esq., and brought to this country in June 1835, by Captain Sutton, who presented it, with others from the same place, to Sir Charles Lemon, Bart., in whose collection it flowered in July 1836. It is also in the collection of Messrs. Loddiges. *Bot. Reg.*

Cryptochilus sanguinea. Wall. Blood-coloured Cryptochilus. *Bot. Reg.* N. S. t. 23. This is a pretty plant, a native of the rocks in the northern provinces of India, where Dr. Wallich only found it once, and in a single spot on stones on the summit of Chandaghiry, a mountain of Nepaul; he received it from his collectors, who sent it from the Cachac mountains, on the frontier of Sylhet. The plant was figured from Messrs Loddiges' collection. *Bot. Reg.*

§ VANDEÆ.

Cleisostoma tridentata. Lindl. Three-toothed Cleisostoma. *Bot. Reg.* N. S. p. 33. An Epiphyte of no great beauty, with the habit of Saccolabium. It is a native of New Holland, from whence it was obtained by Messrs. Loddiges. The flowers are small, and of a dirty reddish white mixed with a little yellow. *Bot. Reg.*

Sarcochilus parviflorus. Lindl. Small-flowered Sarcochilus. *Bot. Reg.* N. S. p. 34. This species is of no beauty. The flowers are green with a few spots of dull purple in the sepals. The labellum is less green beneath, almost white, banded with dull purple, *articulated* with the column, and covered over in the inside with various crowded tubercles, of which the three largest form a crescent next the apex of the lip. *Bot. Reg.*

Oncidium stramineum. Bateman. Straw-coloured Oncidium. *Bot. Reg.* N. S. p. 39. A beautiful stove Epiphyte, sent from the neighbourhood of Vera Cruz to the Horticultural Society of London by their collector, Mr. Hartwig. It has pale straw-coloured flowers, about as large as those of O. flexuosum, with a faint smell of primroses. The base of the lower sepals, the lower part of the lip, the column, and the line along the origin of the petals, are neatly dotted with brown. Honey is secreted by the lip at the base of the lateral lobes next the column. The young plants are very like O. pumilum, but they have much thicker leaves. *Bot. Reg.*

CALENDAR OF GARDENING OPERATIONS FOR JUNE.

Continue planting out Dahlias, Pelargoniums, and all other soft-wooded greenhouse plants; also duplicates of hard-wooded New Holland and South American plants, not performed last month.

Greenhouse plants must be set out into their summer residence as they go out of flower, as well as those previously past flowering, and such hard-wooded plants as are not likely to flower this season; cutting down into shape those that have grown out of form.

Camellias will require to be kept warm, that they may ripen their wood; and should be watered very sparingly for a week when their wood is nearly ripe. to make them set their flower-buds. Afterwards gradually harden them by turning them out of doors until the beginning of September. As there will be room for some more plants in the greenhouse, some of the flowering stove plants may be placed there to make room in that department.

Shift greenhouse and stove plants into larger pots as they require it; also continue to put in cuttings of those where the stock is deficient.

Put in Pink pipings under hand-glasses as soon as the first flowers open, to show that the varieties are correct.

Put in cuttings of Pansies for a succession of flowering plants, and cut in those exhausted by flowering.

Transplant Annuals and Biennials in moist days where wanted.

Keep Dahlias and other flowering plants which require support staked, and carefully tied up, as they advance in growth.

Alpine plants in pots should now be placed where they are shaded from the mid-day sun, and be frequently sprinkled over head with an engine, or fine-rosed watering-pot; *three times a day* is about the medium for dry hot weather.

A few showy Annuals may still be sown for late flowering, particularly some of those from California.

Bulbs of Crocus, Narcissus, and Hyacinth, may be taken up as the leaves decay.

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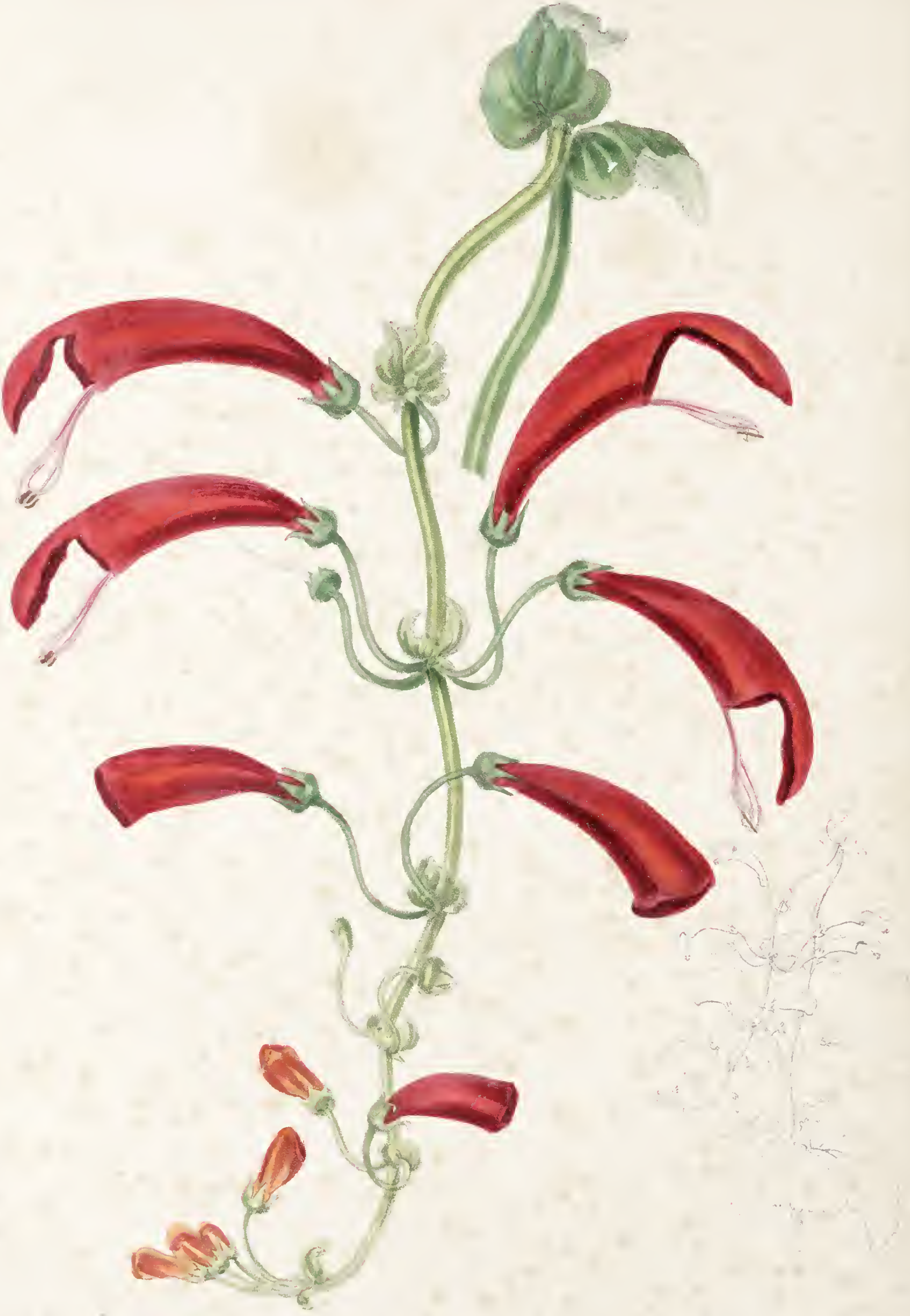


Gesneria reflexa.

Smith del.

raf Printer to her Majesty.

GESNERIA REFLEXA.

LINNEAN SYSTEM.
DIDYNAMIA ANGIOSPERMIA.

NATURAL ORDER.
GESNERACEÆ. (*Lindl.*)

GENERIC CHARACTER.

Gesneria (Lin.) *Calyx* 5-partitus, (plerumque germini adnatus). *Corolla* tubulosa campanulata limbo bilabiato; labio superiore bi-, inferiore tri-fido. *Stigma* bilobum. *Capsula* bilocularis, 2-valvis, placentis parietalibus. (*Bot. Mag.* pl. 3659.)

Calyx 5-parted, (generally attached to the germen). *Corolla* tubular, campanulate, with a 2-lipped limb; upper lip bifid, inferior one trifid. *Stigma* 2-lobed. *Capsule* 2-celled, 2-valved, with parietal placentas.

SPECIFIC CHARACTER.

G. reflexa; herbacea, *foliis* subsessilibus cordatis crenato-dentatis rugosis villosis acutis; *racemo* terminali reflexo; *bracteis* cordatis acutis reflexis; *corollis* arcuatis tomentosis, labio superiore elongato fornicato basi angustato inferiore brevi fauce obliquâ latissimâ truncatâ.

Herbaceous; *leaves* somewhat sessile, heart-shaped, crenately-toothed, wrinkled, hairy, acute; *raceme* terminal, reflexed; *bracteas* heart-shaped, acute, reflexed; *corollas* curved, tomentose, upper lip elongated, arched, narrowed at the base, lower lip short, the mouth very large, obliquely truncate.

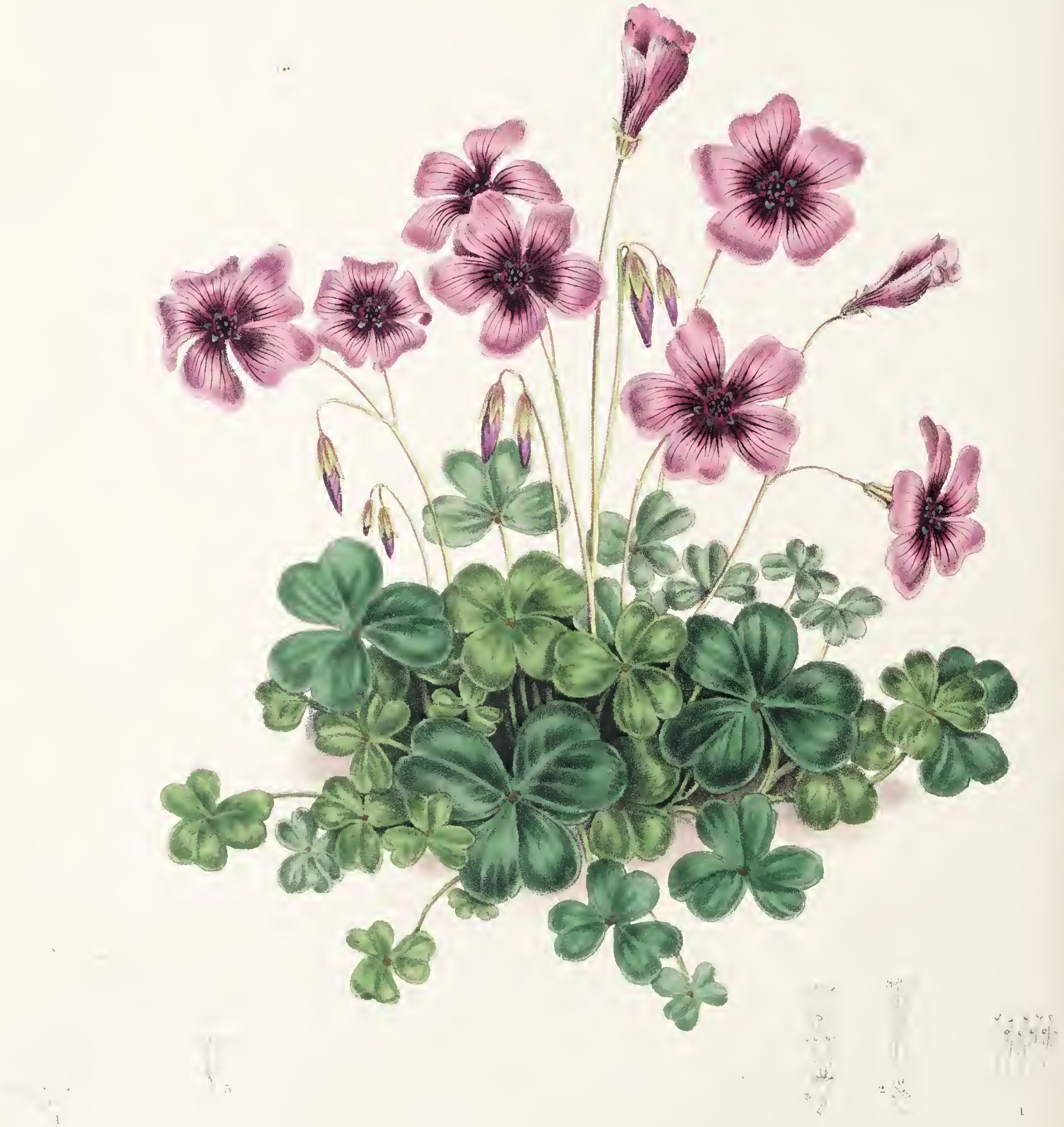
Descr.—Root tuberous. Stem erect, from 12 to 15 inches high, where it forms a tubercular kind of excrescence, from which part it is suddenly reflected to form the raceme, which is pendulous, bearing numerous flowers, opposite, most frequently in pairs. Calyx divided into five deep, acute segments, leaving the tube remarkably short, and investing the lower half of the germ. Corollas large, of a deep and splendid scarlet, covered with a pubescence which gives them a velvety appearance. Filaments about the length of the corolla; anthers yellow, united in a star-like manner. Style of the same length as the stamens; stigma obtuse, 2-lobed.

For an opportunity of figuring this very handsome plant, we are indebted to Mr. Knight of King's Road, Chelsea, in whose fine collection it flowered this spring. In its flowers, as well as in its foliage, it comes near to G. faucialis; from which, however, it appears to differ in some particulars. The margin of the leaf is not so regularly crenate, being rather crenato-dentate; the base too is not rounded up to the midrib, but terminates abruptly at some distance from it, then proceeding towards it in a straight line, and thus leaving a considerable space on each side of the petiole. The corollas also appear to differ somewhat in shape from G. faucialis, while their colour is considered by Mr. Knight to excel in richness all the species of this very handsome genus. As regards the reflexed scape, we were at first disposed to look upon that circumstance as accidental; but we are informed that all the other plants in Mr. Knight's possession uniformly present the same feature, with the same tubercular excrescence at the point of reflexion.

We have been favoured by Mr. Knight with the following account of its introduction:—" It was brought here in the latter part of the summer of 1837, by Capt. Seymour, of the Royal Navy, to whose kindness and zeal for horticulture we are much indebted for many new and good plants; he found it, I believe, in the vicinity of Valparaiso."

It should be potted in peat, loam, and sand, with plenty of drainers in the bottoms of the pots, and it may be increased by cuttings in spring, which ought to be scooped out of the tuber with the point of a sharp knife when about two to three inches long, and struck in pots of sand placed in a brisk bottom heat.

The Gesnerias are all handsome free-flowering stove plants, which will flower stronger and in greater profusion if the tubers are re-potted in March just as they begin to grow, and plunged into a brisk hot-bed for a month to fill the pots with young roots. They may then be removed into the stove, and be shifted into larger-sized pots when necessary.



Oxalis Braziliensis.

[illegible]

J. Graf, Printer to the Queen.

OXALIS BRAZILIENSIS.

(*Brazilian Oxalis.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DECANDRIA PENTAGYNIA.	OXALIDEÆ.

GENERIC CHARACTER.

Oxalis (Lin.) *Calyx* 5-sepalus, sepalis liberis aut basi coalitis. *Petala* 5. *Stamina* 10 filamentis basi breviter monadelphis, 5 exteriis alternis brevioribus. *Styli* 5, apice penicilliformes aut capitati. *Capsula* pentagona oblonga aut cylindracea. Herbæ perennes aut annuæ, caulescentes stipitatæ aut acaules foliis variis sed nunquam abruptè pinnatis. *De Cand. Prod.* vol. i., p. 690.

Calyx 5-sepaled, sepals free, or joined at the base. *Petals* 5. *Stamens* 10, with the filaments shortly monadelphous at the base, the 5 exterior ones being alternately shorter. *Styles* 5, brush-like, or capitate. *Capsule* 5-sided, oblong, or cylindraceous. Herbaceous, perennial or annual, caulescent or stemless, leaves various, but never abruptly pinnate.

SPECIFIC CHARACTER.

O. Braziliensis; acaulis; *foliolis* 3 longè petiolatis rotundato-obovatis emarginatis, subtùs pubescentibus, margine ciliatis, *petiolis* glabris; *scapo* longissimo glabro; 2-3 floro; *petalis* obovatis venosis purpureis recurvatis propè basin annulatis; *calycibus* obtusis apice bi-lineatis; *stylis* longissimis hirsutis.

Stemless; *leaflets* three, longly petiolated, roundish, obovate, notched at the end, underneath hairy, ciliated at the margin; *petioles* smooth; *scape* very long, smooth; *flowers* two; *petals* obovate, veined, purple, recurved, and ringed near the base; *calyces* obtuse, with two linear marks at the apex; *styles* very long and hairy.

Oxalis Braziliensis.—*Lodd. Bot. Cab.*

Descr.—Bulb solitary, out of the tunicated coat of which arise the petioles, in number about five. Leaflets in threes, veined, and more or less coloured with purple underneath; the upper surface smooth and shining; petioles about four inches in length, smooth and purplish; scape very long (from six to ten inches), smooth, and bearing two or three flowers. Flowers large, about an inch across, of a beautiful purple colour, very delicate in their texture, recurved, beautifully veined, and near the base surrounded by a broad ring of darker purple. Pedicels from one to two inches long. Petals obliquely curved and slightly united at the claw. Calyx obtuse, membranous at the edges, with two yellow linear spots at the apex. The stamens are arranged in two rows, five in each row, and of unequal lengths; the first five exterior, and shorter than the five interior. Anthers yellow, thick, and roundish. The styles are very long, twice as long as the longest stamens, and very hairy; both the filaments and styles are of a purplish colour. Stigmas yellow.

This is a very beautiful species introduced from Brazil by Mr. Warre, in the year 1829, and was figured in the *Botanical Cabinet* in the year 1833. It is very closely allied to Oxalis elegans of Humb. et Bonpland, if we may judge from their description. It appears chiefly to differ in the calyx, which in O. elegans is acute, not obtuse; and in the flowers, which are of a violet colour instead of purple, which possibly may be a mistake. On referring, however, to the plate in the work of the above authors, the petals appear to be *narrower*, the calyx acute, and the scapes bearing umbels of six flowers instead of two or three. We have had no opportunity of examining a true specimen of O. elegans. O. Braziliensis bears in many collections the name of Oxalis bipunctata.

Our drawing was made from a fine plant in the collection of the Birmingham Botanical and Horticultural Society.

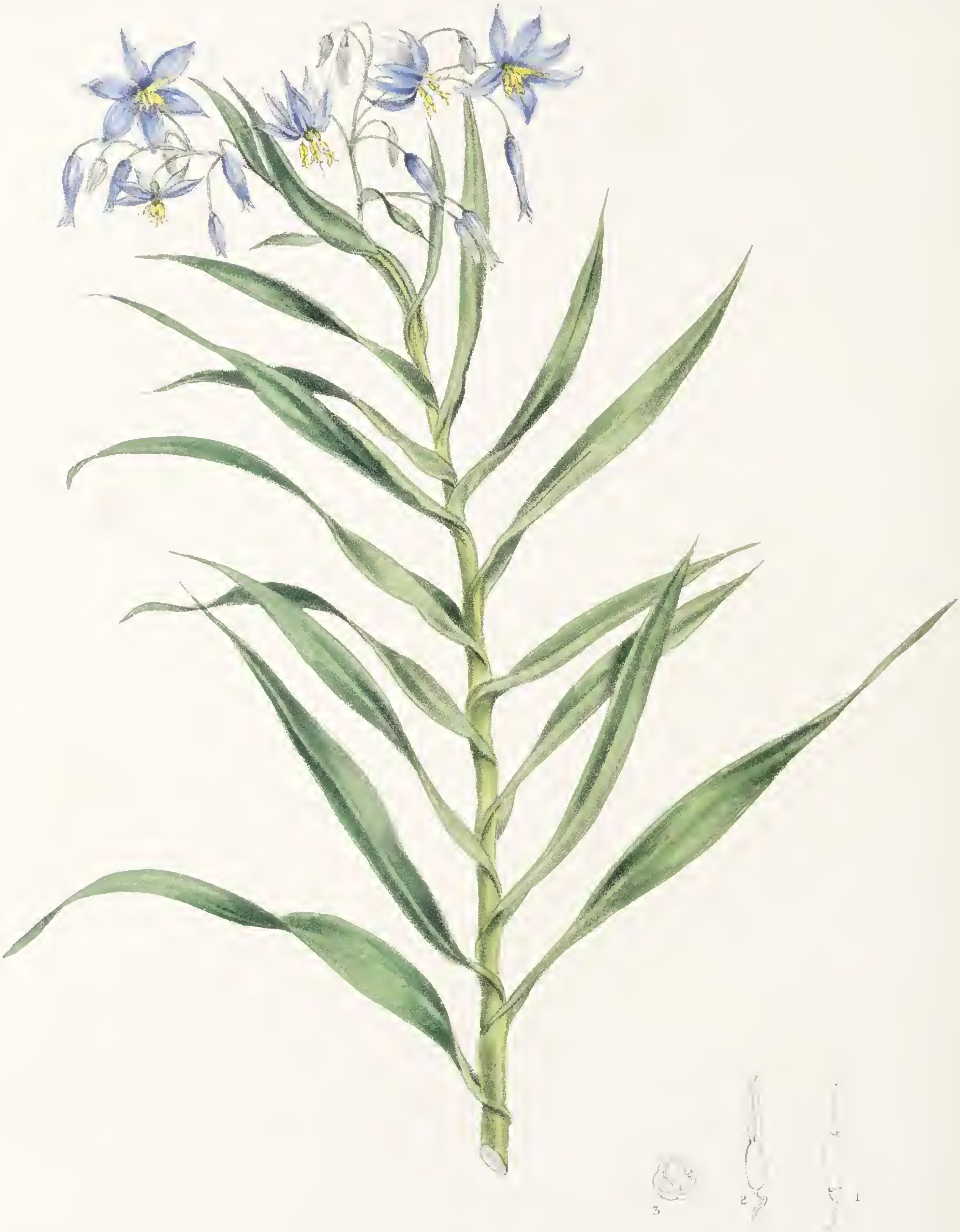
This species succeeds best treated as a stove plant, where it will flower profusely in the spring, and frequently again in the autumn. It will, however, do in the greenhouse; and we have even seen plants that have withstood the severity of last winter out of doors. When kept in a pot, this species should be potted in *peat*, *loam*, and *sand*, with plenty of drainers at the bottom of the pots. It should be placed near the glass, and receive a good supply of water when in a growing state, but be kept dry while dormant. It may be increased by dividing the bulbs just before they commence growing.

In addition to the remarks on the cultivation of this genus published in our first volume page 44, we will offer a few hints, principally on the cultivation of the Cape species, which are numerous and beautiful. The Cape species require but little care, and should be potted in a similar compost to what we have already described. The best time for potting and dividing them is early in the spring, before they commence growing, when they should be placed upon an airy shelf, against the back of the wall of the greenhouse near the glass, and have little water until the leaves appear above the ground, when the quantity ought to be increased, but never given in excess. After flowering, gradually decrease the quantity of water until the leaves begin to decay. They may be placed out of doors along with the greenhouse plants in September. Most of the Cape species may also be grown in cold frames.

For the derivation of the generic name *oxalis*, vide vol. i., page 44.

Fig. 1, the monadelphous or united stamens, the exterior ones alternately shorter; 2, the germ, with its styles and stigmas; 3, the same, together with the anthers, which are much exceeded in length by the styles; 4, the petals united at the claw, and obliquely curved; 5, calyx.

N° 63.



Stypandra frutescens.

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Graf Printer to her Majesty

STYPANDRA FRUTESCENS.

(*Shrubby Stypandra.*)

LINNEAN SYSTEM.	NATURAL ORDER.
HEXANDRIA MONOGYNIA.	ASPHODELIACEÆ.

GENERIC CHARACTER.

Perianthium 6-partitum æquale, patens, deciduum. *Stamina* 6, filamenta infrà attenuata, curvata glabra suprà stuposo-barbata. *Antheræ* basi emarginatæ insertæ. *Ovarium* loculis polyspermis. *Stylis* filiformibus. *Stigma* simplex. *Capsula* 3 loc. 3 valv. *Semina* pauca ovalia lævia umbilico nudo. *Embryo* rectus.

Plantæ *perennes.* *Rhizoma* repens fibris fasciculatis, filiformibus. *Folia* lineari-ensiformia, stricta; caulina nunc numerosa disticha vaginis integris strictis; nunc pauciora basi semivaginantia. *Flores* paniculato-corymbosi, pedicellis sub-umbellatis, cum perianthio articulatis, cærulei vel albicantes. *Antheræ* defloratæ revolutæ filamentorumque barbæ flavæ.—Brown's *Prod. Flor. Nov. Holl.* p. 278.

Perianthium divided into six equal parts, patent and falling off. *Stamens* six; filaments beneath slender, curved, smooth, above bearded. *Anthers* inserted at the base, notched. *Ovarium* with many-seeded cells. *Styles* filiform. *Stigma* simple. *Capsule* 3-celled and 3-valved. *Seeds* few, oval, smooth, with a naked umbilicus. *Embryo* straight.

Plants *perennial.* *Rhizoma* creeping, fibres bundled, filiform. Radical leaves linear sword-shaped, upright; stem leaves numerous, distichous, sheathing, entire, upright, a few half sheathed at the base. Flowers in a paniculate corymb, nearly umbellate, joined with the perianth, blue or whitish. Anthers, after flowering, bent back, and the beards of the filaments yellow.

SPECIFIC CHARACTER.

S. frutescens; *frutescens* glabra; *caule* compresso; *foliis* distichis lineari-lanceolatis acuminatis vaginatis basi recurvatis; *floribus* cernuis-subcorymbosis cæruleis.

Frutescent, smooth; *stem* compressed; *leaves* in two rows, linear-lanceolate, acuminate, sheathing, recurved at the base; *flowers* drooping, somewhat corymbose, blue.

Stypandra frutescens. *Flor. Cab.* No. XVI., p. 61.

Descr.—Stem frutescent, smooth and flattened, three feet high, the lower part without leaves, and covered with numerous brown sheaths. Leaves in two rows, smooth, from four to six inches long, of a light, pleasing, green colour, sheathing at the base, and acuminate; sheaths about half an inch long, reflexed. Flowers of a bright blue colour, pedicellate, somewhat corymbose, drooping; perianth unequal, composed of six parts, three interior and three exterior, the interior broader than the exterior; divisions ovate acute; filaments are as stated in the generic character, thickened at the apex, and covered with yellow hairs. Anthers fixed on their base, recurved after they have discharged their pollen; ovarium three-celled; seeds smooth, oval, and black.

This is a very distinct species of stypandra, and differs somewhat from Dr. Brown's generic character, in not having the perianth equal. It was raised from New Holland seeds in the year 1836, and although not particularly showy, possesses a considerable degree of elegance, and will form an interesting addition to those already introduced.

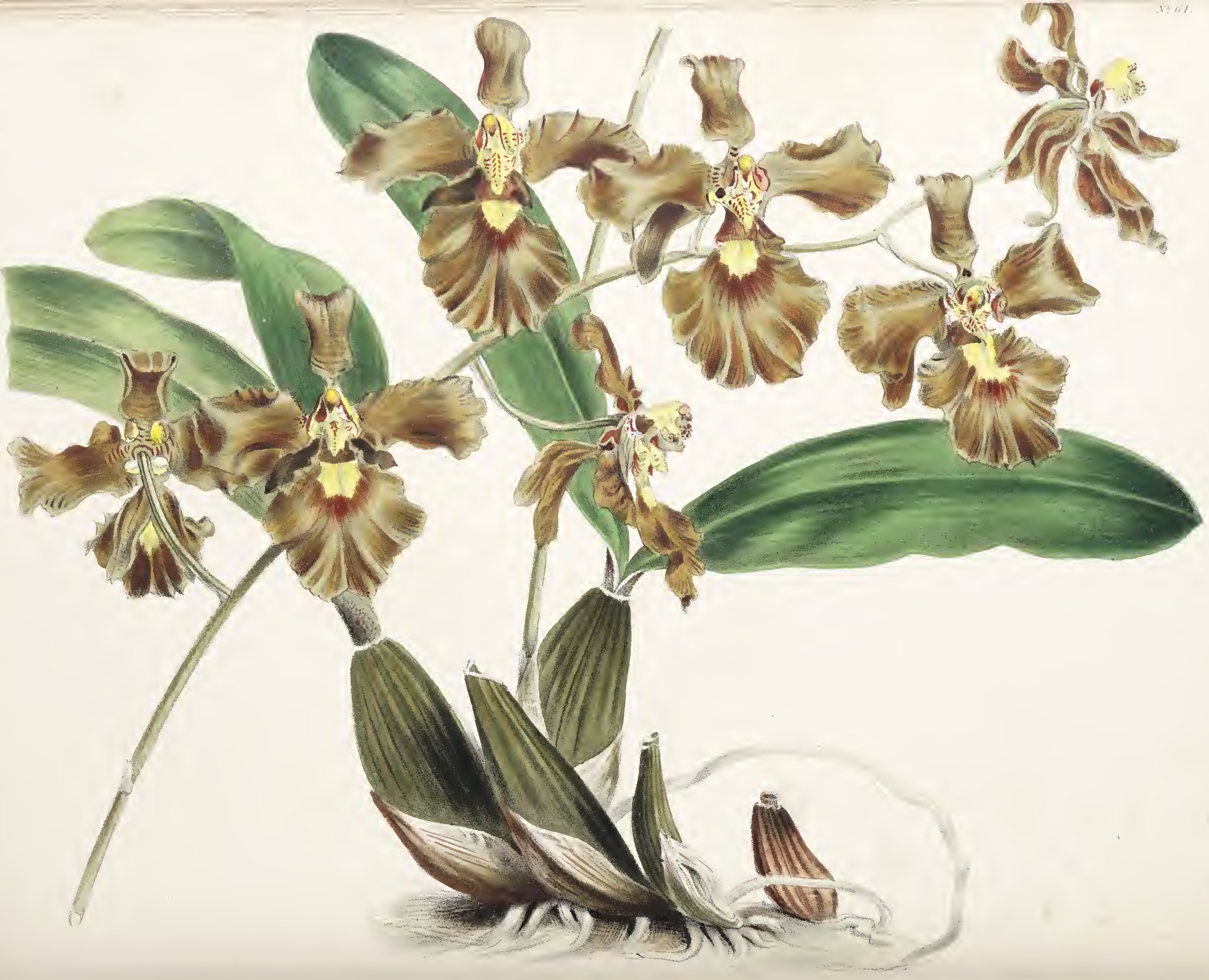
It appears to be allied to S. cæspitosa of R. B., but from that we think it distinct, as the flowers are *drooping*, not erect; and the leaves are not sword-shaped, but very similar to grass both in form and texture.

The genus stypandra is exclusively of New Holland, and contains about six species with the one now described, five of which species have been described by Dr. Brown in *Prod. Flor. Nov. Holl.:* three of them are found in the vicinity of Port Jackson and Hunter's River; the other two from Cape Leewin to Cape Wilson and Bass Strait. We are unacquainted with the locality of our present species.

In their culture they require but little care, and should be potted in peat, loam, and sand. The species now described produces an abundance of suckers from the root, and may easily be propagated by dividing them. It may also be increased by cuttings and seeds, the latter are however not freely perfected.

Fig. 1, receptacle, germ, and style; 2, stamen; 3, section of seed-vessel.

No. 61.



Oncidium Crispum

ONCIDIUM CRISPUM.

LINNEAN SYSTEM.
GYNANDRIA MONANDRIA.

NATURAL ORDER.
ORCHIDACEÆ.

GENERIC CHARACTER.

Oncidium (Swartz.) *Perianthium* explanatum. *Sepala* sæpiùs undulata; lateralibus nunc sub labello connatis. *Petala* conformia. *Labellum* maximum, ecalcaratum, cum columnâ continuum variè lobatum, basi tuberculatum vel cristatum. *Columna* libera semiteres apice utrinque alata. *Anthera* semibilocularis rostello nunc abbreviato nunc elongato rostrato. *Pollinia* 2, posticè sulcata caudiculâ planâ glandulâ oblongâ. Herbæ epiphytæ, nunc pseudobulbosæ. *Folia* coriacea. *Scapi* paniculati vaginati, rarius simplices. *Flores* speciosi lutei sæpius maculati rarò albi.

Perianth explanate. *Sepals* more frequently undulate; the lateral ones sometimes connate beneath the labellum. *Petals* similar in form. *Labellum* very large, spurless, continuous with the column, variously lobed, tuberculated or crested at the base. *Column* free, semiterete, with the apex winged on both sides. *Anther* half 2-celled, rostellum sometimes short, sometimes elongated, beaked. *Pollen-masses* 2, furrowed behind, with a flat caudicula and an oblong gland. Epiphytic plants sometimes with pseudobulbs. *Leaves* leathery. *Scapes* panicled, sheathed, more rarely simple. *Flowers* handsome, yellow, most frequently spotted, rarely white.

SPECIFIC CHARACTER.

O. Crispum; pseudobulbis oblongis sulcatis rugosis diphyllis; *foliis* lanceolatis coriaceis acutis; *scapo* simplici multifloro; *sepalis* recurvis undulatis obtusis lateralibus semiconnatis; *petalis* duplò majoribus oblongis undulatis unguiculatis; labelli lobis lateralibus cornuformibus recurvis nanis, intermedio maximo unguiculato subrotundo-cordato undulato, cristâ duplici serie deltoideâ dentatâ, columnæ alis rotundatis denticulatis carnosis. (*Lindl. gen. et spec. Orchid.*)

Pseudobulbs oblong, furrowed, wrinkled, 2-leaved; *leaves* lanceolate, leathery, acute; *scape* simple, many-flowered; *sepals* recurved, undulated, obtuse, the lateral ones semiconnate; *petals* twice as large, oblong, undulated, clawed; lateral lobes of the labellum horn-shaped, recurved, very small, the intermediate lobe very large, clawed, somewhat rotundo-cordate, undulated, crest in a double series, deltoid, toothed, wings of the column rounded, minutely-toothed, fleshy.

Oncidium Crispum.—*Lodd. Bot. Cab.* 1854.

Descr.—Pseudobulbs bearing two leaves; leaves oblong lanceolate, somewhat obtuse, apiculate at the apex, dark green, spotted with purple towards the base posteriorly, with a deep furrow down the centre, and an elevated ridge or keel extending, on the under surface, from the base to the apex. Scape simple, many-flowered. Flowers large (nearly three inches in diameter), and very remarkable in colour, being of a rich reddish brown, approaching to a bright bronze, the lip marked at the base with bright yellow, as are also the minute lateral lobes; the claws of the petals yellow spotted with brown; column with its wings yellow behind, reddish brown in front; stigmatic cavity large, oval; crest yellow, spotted with brown.

This is an elegant and interesting species of Oncidium; for an opportunity of figuring which we are indebted to John Willmore, Esq., of Oldford, in whose stove it has recently flowered. It affords an instance, at the same time, of the changes which these plants are disposed to undergo, not only in the colour of their flowers, but in the structure of their different parts. The flowers of the specimen originally figured by Messrs. Loddiges in their Botanical Cabinet are represented as being of an *orange* colour marked with yellow; and the leaves, according to Professor Lindley's character, acute; while in our present specimen they are of the remarkable colour above described, the leaves being obtuse and apiculate at the apex.

It is a native of Brazil, and is said to have been first found in the Organ Mountains, growing upon dead trees.

It is considered to be rather more difficult to grow well than some other species of this genus. It requires the moist stove when growing, but should be kept more cool and dry when in the dormant state. It should be potted in coarse porous peat mixed with plenty of small drainers, and placed higher than the rim of the pot, so as to ensure no water lodging about the roots of the pseudo bulbs while they are dormant.

MISCELLANEOUS REMARKS BY A PRACTICAL GARDENER.

BEDS FOR PANSIES.

To make beds for pansies, throw out six inches of the soil from the bed, then dig in and well mix four inches of well-rotted cow manure into the bottom of the bed, going as deep as the spade will allow; above which replace the soil thrown out, and then point in one inch of the same sort of well-rotted manure. Plant the bed as soon afterwards as possible, before the soil gets settled. A damp and partially shaded border is best for summer flowering the pansy, but the surface ought to be frequently stirred, and never allowed to get firm, which it will be apt to do in a shaded situation: for spring and autumn flowering, a more open situation is preferable.

CATERPILLARS ON THE GOOSEBERRY.

To prevent gooseberries from being infected with caterpillars, by which they are liable to be attacked occasionally in every soil and situation, they should be watered over the bushes in winter with cow-urine, throwing over the head of each bush about half a pail full, without any great nicety about quantity. The hot nature of the liquid clears the bushes of any eggs of insects, mosses, &c., and also destroys any eggs deposited in the soil near the roots of the bushes (it being doubted by some whether these are deposited in the soil or on the bushes), while at the same time it fertilizes the soil. The liquid is most conveniently collected by having casks or tanks for receiving it connected with the channel from the cow-house. The healthiest bushes and finest fruit will be invariably obtained by this process of winter watering; but attention should also be paid to supplying the bushes with the requisite quantity of manure, lightly turned in with the spade.

APHIS ON THE ROSE.

The destructive effects of the aphis, which too frequently attacks rose bushes, more particularly in ungenial seasons, may to a great extent be prevented by allowing the bushes to remain unpruned until the middle of May, by which time they will be pushing out their young shoots from the extremities of the plant, and if sudden changes have taken place in the weather from heat to cold &c., the aphides will appear in numbers. Then is the time to prune back the shoots to where the buds are not burst. The leaves on which the aphides are feeding being thus destroyed and none left upon the bushes to feed the insects, they consequently perish, while the plants soon push afresh with a more genial season, and invariably flower finer than if pruned at what is called the proper season, although sometimes a little later. Tobacco liquor mixed in water is effective in destroying these insects by watering the roses overhead in the evening with the mixture.

EUPHORBIACEÆ.

One of the most interesting natural orders of systematic botany, is the large order Euphorbiaceæ. The species are as remarkable for their various habit, and curious mode of flowering, as they are for the qualities contained in their milk-like juices, and for the manifold dietetic, medical, and poisonous properties extractable therefrom. They are natives of almost every part of the world, though the chief of them are tropical. The spurge, the nettle spurge, the manchineel, the castor-oil plant, the xylophylla, and the box, with their numerous allies, are all included in this order. The structure of the flowers of Euphorbia was long very much misunderstood. Formerly the flowers were supposed to be united, and from the number arranged in a radius round the pistil, situated on the disk, the genus was referred to the eleventh class of Linnæus. But it was reserved for Dr. Brown to prove that what had been mistaken for a single flower is, in truth, a collection of twelve or more monandrous naked florets, arranged in a circumference and surrounding a single three-pistilled central flower which forms the disk. In the Euphorbiæ the involucra are so highly developed, that neither calyx nor corolla is evolved, and notwithstanding the abortion of perianth, nectaries are present, alternating with the lobes of the involucra.

Many of the species are worthy of cultivation, at least for their strange appearance, if not for their beauty. Their milky sap, which contains more or less of caoutchouc, is so acrid that it will redden or even blister the skin, and is used to destroy callosities, whence many of the species are called *wart-worts.* The leafless and prickly species make excellent hedges, and are often employed for this purpose in warm climates. During the wars in Hindostan, such fences were more feared by our troops than *chevaux-de-frise*, for soldiers not only got their flesh torn, but the wounds were filled with the burning sap ; and when cavalry regiments were forced through them, the horses became ungovernable.

A gum resin called Euphorbium is a useful drug, and is principally obtained from three of the species, namely, E. officinarum, E. Canariensis, and E. antiquorum. The sap of E. capitata and E. helioscopia, are used by the peasants of South America for the cure of the bite of serpents or vipers. E. corollata and E. cyparissias are both medicinal ; E. heptagona is a violent poison, and used by the Africans to anoint their arrows and spears. The seeds of E. lathyris are not unfrequently pickled instead of capers, and eaten as a sauce with meat, whence it is called the caper-spurge.

Another genus belonging to this order is the hippomane, so called by the Greeks because it was supposed to make horses mad. The modern hippomane is the West Indian manchineel, a very acrid and deleterious plant. The sap which exudes when the boughs are cut or broken, will blister and sphacelate the skin, and if inserted into wounds cause death. The timber is finely veined, and takes a high polish; but before the trees are felled, fires are usually lighted round, to inspissate the sap and render the woodman's occupation less dangerous, for the juices falling on the naked hands or feet cause the same acute pain as if the parts were seared with a red-hot iron.

Excæcaria is another very poisonous genus belonging to this tribe; if the juice gets in the eyes it causes blindness, whence its name. Hura crepitans is the sand-box, or monkey's dinner-bell, as it is sometimes called, from the cracking noise which is made by the sudden opening of the capsules. The seeds, although acrid and injurious to man, are not so to monkeys, who by the cracking of the capsules are summoned to their repast. Caoutchouc exists in the sap, and is very acrid.

The tallow-tree of China (Stillingia) is economical; and oil is expressed from one of the species, which hardens when exposed to cold to the consistence of common tallow, and by boiling becomes as hard as bees-wax.

The dog's-mercury is a very poisonous plant, both to men and brute animals. Sheep, when turned into woods, often suffer from it; and serious accidents have happened from its being mistaken for goose-foot and other pot-herbs. It is reported in some botanical works to be eatable when boiled: this however is an error, arising from its being mistaken for the annual mercury, which is innocuous. This last (mercurialis annua) is diœcious, "and remarkable for the irritability of its flowers, the stamineous ones becoming loosened from the footstalks when mature, and vaulting elastically to the neighbouring pistilline plants:"—a fact just observed by the late Professor Burnett, of the King's College, London.

The Palma Christi is a well-known tender annual in gardens, admired for its fine foliage and flowers. The seeds yield the valuable castor oil so useful in medicine. Elæococcus verrucosus and E. vernicia, yield oils which are useful for lamps or for painting. The different species of Croton Tiglium, Cascarilla, &c., are all medicinal. Crozophora tinctoria affords the *turnsol*, which is a coloured juice extracted from the fruit, and with which rags are wetted for exportation. These rags are steeped in water to extract the colour, and with which jellies and other things are coloured for the table. Gum lac is sometimes collected from the Aleurites laccifera. The juice of the bark of Anda Braziliensis is employed by the native Americans to intoxicate fish that they may be easier caught. The hyæna-poison is the fruit of a Euphorbiaceous plant found in South Africa; the seeds, when powdered, are sprinkled over the carcase of a dead lamb, and are then an enticing but a fatal bait for the hyæna.

Iatropha is valuable both as food and medicine. The I. manihot affords the celebrated manihot of the negroes, better known as the *cassava* of the West Indies and the *tapioca* of Brazil. This nutritious food is the produce of the root of the manihot, which, in its fresh state, is actually poisonous; but when its juices are dissipated by fire, the farinaceous remains are not only innocuous but palatable.

and useful for many culinary purposes. Two ounces of cassava will suffice for a meal, and a pound will support a man for twenty-four hours. The physic-nuts of the West Indies are the seeds of Iatropha curcas; but those of multifida are cathartic likewise. The Chinese make a varnish for their ornamental works by boiling the oil of I. curcas with the oxide of iron. I. elastica (Siphonia or Hevea elastica) is commonly referred to as one of the chief sources of caoutchouc; but this valuable substance is found in a variety of plants of this order.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

RANUNCULACEÆ. Juss.

Delphinum laxiflorum. D. C. Loose-flowered Larkspur. *Bot. Reg.* N. S. t. 30. This is a pleasing hardy perennial, growing from four to five feet in height, in any good garden soil, and well adapted for planting in the shrubbery; flowers in June. It may be increased either by seeds, or the division of the root. *Bot. Reg.*

CARYOPHYLLACEÆ. Juss.

Dianthus Bisignani. Jen. Prince Bisignani, Pink. *Bot. Mag.* N. S. t. 29. A beautiful half-hardy shrubby species, from the garden of the Hon. W. F. Strangways, at Abbotsbury, who gives the following particulars respecting it. It is a native of the coast of Calabria and Sicily. It is allied to D. fruticulosus, *Fl. Gr.*, from which it differs in its sharper leaves and more imbricated calyx. Unlike most maritime plants, it is less glaucous in its wild state than in cultivation. It flowers late, is best kept in a greenhouse, and is not easily raised from seed. The succulent character of the leaves spoken of by the Italian botanists, disappears very much in this, as well as in D. fruticosus, under cultivation. *Bot. Reg.*

LEGUMINOSÆ. Juss.

Sutherlandia frutescens, *var.* sub canescens. Hoaryish var. of shrubby Sutherlandia. *Var.* sub. canescens; foliis ovatis emarginatis calycibus nigris hirsutis vestitis; floribus purpureis.

This is very nearly related to S. frutescens, and indeed only to be distinguished from that species by the leaves being broader, more deeply notched at the end, less canescent, and the flowers of a delicate colour. It is in the possession of Messrs. Pope and Sons, Handsworth. We have not been informed from what country it was imported.

CACTEÆ. Juss.

Echinocactus Eyriesii, *var.* glaucus. Lindl. Glaucous Sweet-scented Porcupine Cactus. *Bot. Reg.* N. S. t. 31. This is a delicate variety, having flowers of a delicate whitish and yellowish green, and is in the collection of the London Horticultural Society, but its origin is not known. It is distinguished from E. Eyresii in having the angles much acute, and less wavy; the spines are longer, more slender, and the tube of the flower is shorter, green, and free from the long coarse ash-coloured shagginess which distinguished the above species. The flowers sweet-scented, and appear in July. *Bot. Reg.* N. S.

COMPOSITÆ.

PANÆTIA FULVA. Lindl. Tawny Panætia. *Bot. Reg.* N. S. p. 47. A beautiful little annual plant with the habit of Gnaphalium, introduced from the Swan River by R. Mangles, Esq. It flowered in May, 1838, and differs from P. Lessonii in the shape of the involucral scales, in the number of the setæ of the pappus, and in being a larger plant covered all over with cobweb-like hoariness. The flower-heads are of the red gold colour of Helichrysum bracteatum, dry, like many of the everlasting flowers; and although small, pretty. *Bot. Reg.*

MONOCOTYLEDONES.

BROMELIACEÆ.

BROMELIA DISCOLOR. Lindl. Two-coloured Bromelia. *Bot. Reg.* N. S. p. 48. This is a rare South American stove plant, from whence it was received by Miss Garnier of Wickham, near Southampton, and in whose collection it lately flowered. It has spiny heads of dull pink flowers, which change to brown, and is not handsome. B. longifolia, Rudge, seems to be its nearest ally; but differs, as may be seen by the long character given by Dr. Lindley, in the long tube of the corolla, and the long simple stigmas. *Bot. Reg.*

ASPHODELEÆ.

BULBINE SUAVIS. Lindl. A pretty greenhouse plant, found by Major Mitchell, the indefatigable Surveyor General of New South Wales, in his last journey into the interior of New Holland in 1836. It resembles Bulbine Annua in the tint of its yellow flowers, but they are much larger, are arranged in a long raceme, and diffuse a delicious fragrance resembling that of Mignionette. The scape is between two and three feet high. It flowered in the garden of the London Horticultural Society, May, 1838. The roots were dug up in the rich plains of Austria Felix in 1836. *Bot. Reg.*

AMARYLLIDACEÆ.

ELISENE LONGIPETALA. Lindl. Long-petalled Elisene. *Bot. Reg.* N. S. p. 45. This is nearly related to Pancratium rigens, out of which Mr. Herbert has made the above genus. It is a native of Peru. It was obtained by Richard Harrison, Esq., of Aighburgh, near Liverpool, and it blossomed in the stove of that gentleman in May, 1838. The leaves are much like those of an Amancæs; the flowers are of a delicate semitransparent white, and are remarkable for their long weak sepals, which are rolled up, and in that state scarcely wider than the long white declinate stamens. The long description given by Dr. Lindley in the Register will be very satisfactory to botanists. *Bot. Reg.*

Phycella biflora. Lindl. Two-flowered Phycella. *Bot. Reg.* N. S. p. 43. This beautiful bulb was exhibited at a meeting of the London Horticultural Society meeting in Regent Street, on the 17th April, where it was awarded by a medal. It was received from Mr. Toward, gardener to his Royal Highness the Duke of Gloucester, at Bagshot, and had been obtained from Chili. None of the species are to be compared with it for beauty. The flowers are two inches long, with a diameter of as much when expanded ; the tube is a clear, bright, greenish yellow, while the upper end is of the most vivid scarlet, just tinged with purple. The processes of the tube of the flower by which the genus is known are nearly half an inch long, lanceolate, and split into two or three sharp lobes. It is a frame bulb, and worth cultivation. *Bot. Reg.*

ORCHIDACEÆ. TRIBE MALAXIDEÆ § PLEUROTHALLIDEÆ.

Pleurothallis marginata. Lindl. Marginate Pleurothallis. *Bot. Reg.* N. S. p. 42. A small species of no beauty related to P. grobyi. It was sent to James Bateman, Esq., from Guatemala, by Mr. Skinner, and grows in dense tufts on the trees. *Bot. Reg.*

Pleurothallis aphthosa. Lindl. Warty Pleurothallis. *Bot. Reg.* N. S. p. 42. This is a Mexican species with dull yellow flowers, received by J. Bateman, Esq., from the Birmingham Botanic Garden. The sepals are very thick, and brittle, smooth inside, and covered at the end and towards the edges with elevated warts ; the petals are almost transparent, and of a very light dull yellow ; the labellum is fleshy, and of a deep purple. *Bot. Reg.*

Pleurothallis villosa. Villous Pleurothallis. Foliis ovatis coriaceis, petiolis sulcatis ; scapo flexuoso ; bracteis spathosis ; floribus villosis purpureo-maculatis ; supremo sepalo subspathulato margine reflexo, carinato ; sepalis lateralibus connatis basi gibbosis ; petalis spathulatis minutis ; labello linguiformi recurvato sulcato.

This is a very pleasing species, in the collection of G. Barker, Esq. It is a native of Mexico. It grows about four inches high, the scape is flexuose, and at each bend it bears a flower ; the flowers are very woolly, beautifully spotted with purple, and the lateral sepals are gibbous at the base. It seems a free flowerer, having put forth flowers two or three times during the last six months.

Stelis tristyla. Lindl. A species imported from Brazil by Messrs. Loddiges, and, like the rest of the genus, not remarkable for its beauty, although one of the largest that has yet been seen. It flowered in April.

Cœlogyne prolifera. Lindl. Proliferous Cœlogyne. *Bot. Reg.* N. S. p. 44. A plant in the collection of His Grace the Duke of Devonshire at Chatsworth, and introduced from the East Indies by Mr. Gibson. Its flowers are small, of a pale brownish yellow green, with brown veins. It agrees with the character in Dr. Lindley's Gen. et Spec. Orchideæ, except that the pseudo-bulbs are not angular, but round. *Bot. Reg.*

§ EPIDENDREÆ.

Epidendrum equitans. Lindl. Equitant Epidendrum. *Bot. Reg.* N. S. p. 44. A singular species, and so much resembling the genus Fernandezia in its habit, that it was not to be distinguished from that genus until it flowered. The flower is of a dull chocolate brown. It was sent by Mr. Hartweg to the London Horticultural Society from Vera Cruz in the year 1836. *Bot. Reg.*

Epidendrum tridactylum. Lindl. Three-fingered Epidendrum. *Bot. Reg.* N. S. p. 46. A curious Brazilian species with smaller flowers than those of any other species of the genus yet in the gardens. It is from the collection of Stephen Cannon, Esq., of Stratford Green. The flowers are of a brownish yellow except the column, which is green, short, thick, and wedge-shaped. It flowered for the first time in May last. *Bot. Reg.*

Epidendrum cauliflorum. Lindl. Stem-flowering Epidendrum. *Bot. Reg.* N. S. p. 47. This species is a native of Rio Janeiro, from whence it was obtained by Messrs. Loddiges. The flowers are about the size of those of E. nutans, of a pale straw colour, and are remarkable for appearing from the side of the stout cylindrical stem, bursting forth from among the dry sheaths with which it is closely invested. *Bot. Reg.*

Epidendrum crispatum. Crisped-lipped Epidendrum. Pseudo-bulbis ovatis diphyllis; foliis lineari lanceolatis carnosis obtusis submucronatis; scapo multifloro; petalis et sepalis linearibus striatis; petalis sepalis minoribus; labello tripartito laciniis lateralibus, columnam involventibus, intermediâ elongatâ crispatâ, ovario varicoso.

Pseudo-bulbs, ovate, clustered, wrinkled, at the apex of which are two light green narrow lanceolate fleshy leaves, obtuse at the point and ending with a short mucrone. The flower-scape rises from the centre of the leaves on the pseudo-bulb, bearing several flowers. The sepals are linear, about an inch long, and of a greenish brown colour, striped with purple. The petals are the same length as the sepals, and of the same colour, but a little narrower. The labellum is joined at the base of the column, and divided into three parts; the side portions are wrapped round the column and are of a purple colour; the middle portion is twice as long as the side portions, ovate, tapering to the union with the side portions; white striped with purple, crisped at the margin; anther four-celled, dark brown at the top. Pollen masses in pairs, two in each cell; ovarium long, covered with warty excrescences.

This is a very pretty and distinct species of Epidendrum, in the collection of George Barker, Esq., of Birmingham, who imported it from Mexico in 1837. The contrast between the long crisped white labellum and sepals and petals is very pleasing and striking.

CALENDAR OF GARDENING OPERATIONS FOR JULY.

Epacris, Hovea Pultenæa, and other singular New Holland plants that are apt to perish from the heavy rains when placed out of doors, should be removed from the greenhouse into pits, or frames where the sashes can be put on during heavy rains, and also in clear sunshine; as recommended for Ericas, page 9.

All other greenhouse plants not already turned out for the summer ought now to be, which will clean and strengthen them for winter; they should also be reduced into shape.

Shift greenhouse and stove plants that require it; fresh surface all others by taking off from one-eighth to one-fourth of an inch of the surface soil, and replacing it with that used for potting each family of plants.

Strike pink pipings under hand-glasses, and the more weak varieties may be layered when the grass is too weak for pipings.

In preparing the situation for the hand-glasses, two or three inches of rough coal ashes should be placed under the soil to prevent worms from getting through amongst the soil.

The greenhouse will now be filled up with balsams, which should have plenty of water given them in the pots, but wetting them overhead as little as possible; they should also be turned round on the stage with the tender annuals once or twice a week, to prevent them from being drawn on one side.

Layer Carnations as soon as it is ascertained from the first flowers opening that the plant has not *run* from its variety.

Head down Pelargoniums when done flowering; and cuttings of them may also be put in.

Put in also Pansy cuttings for a late flowering succession.

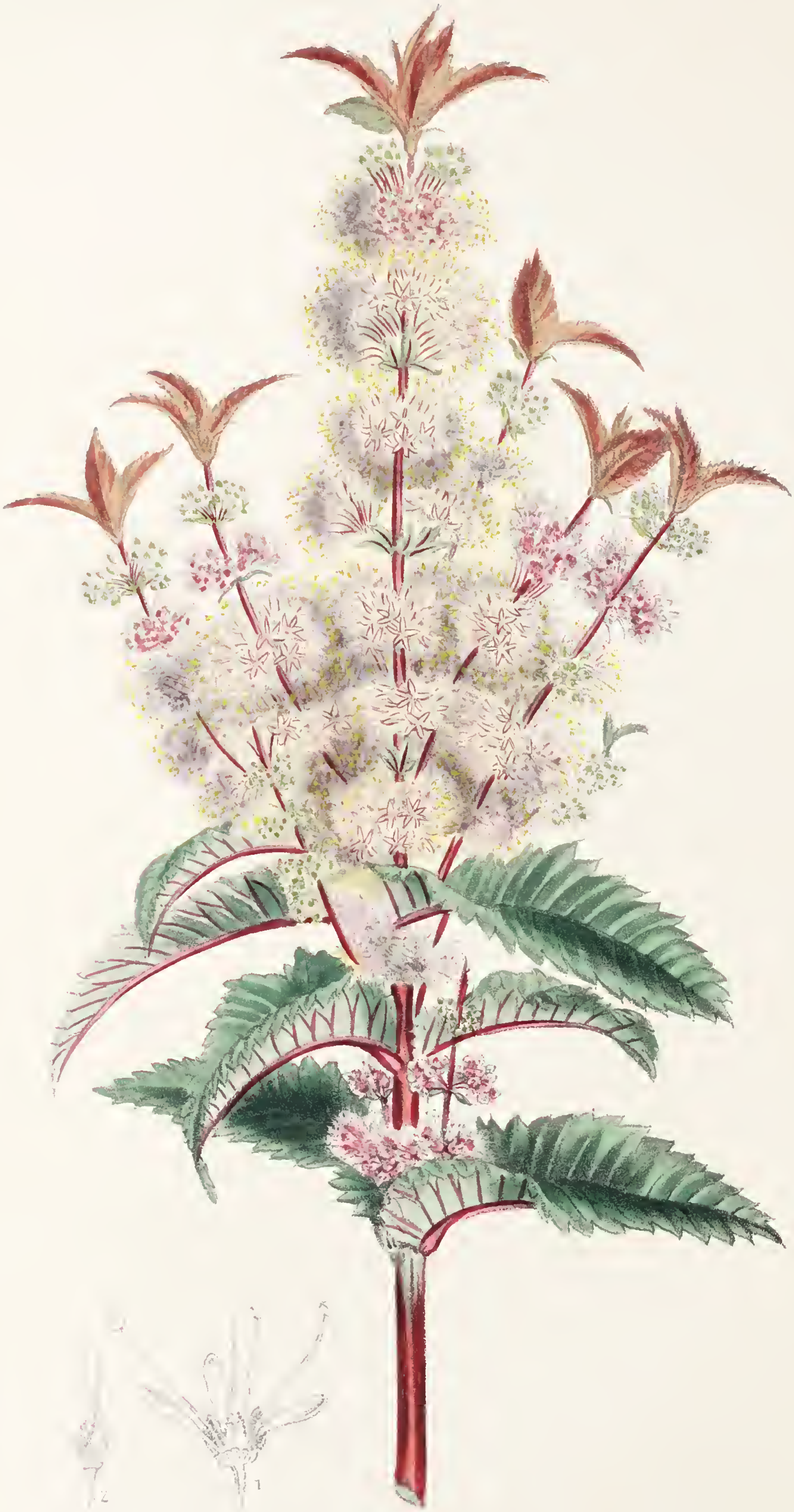
Occasionally fresh set the greenhouse plants out of doors to prevent them striking root into the soil. To prevent this, a paved bottom is the best for setting them on.

Sow Hollyhocks, Sweet Williams, French Honeysuckles, Stocks, and other biennials, for flowering next season.

Deep hoe flower beds, and carefully stake all plants requiring support.

Dahlias will require to be staked as they advance in growth.

Plants in the stove should be kept as thin as possible by removing a part into the greenhouse.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WEINMANNIA VENOSA.

(*Vein-leaved Weinmannia.*)

LINNEAN SYSTEM.	NATURAL ORDER.
OCTANDRIA DIGYNIA.	SAXIFRAGACEÆ. (*De Cand.*)

GENERIC CHARACTER.

Weinmannia (Lin.) *Calyx* regularis 4-partitus persistens. *Petala* 4 regularia sessilia fundo calycis nascentia, et ejus lobis alterna. *Stamina* 8 inter discum et petala nascentia, sepalis petalisque opposita. *Antheris* intus dehiscentibus. *Ovarium* sessile liberum biloculare, ad basin disco urceolato cinctum. *Styli* 2 distincti. Dissepimentum utrinquè placentiferum. *Ovula* pauca (3-8) in quoque loculo biseriata. *Semina* elliptico-subreniformia, minima, sæpissimè pilis obsita. *Radicula* hilum spectans. Arbores vel frutices, ramis oppositis. *Folia* opposita simplicia vel composita. *Stipulæ* interpetiolares. *Rami* axillares solitarii. *Flores* parvi in spicis, capitulisque dispositi, interdùm 5-partiti decandri.—*De Candolle Prod.* vol. iv. p. 8.

Calyx regular, 4-parted, not falling off. *Petals* 4, regular, sessile, arising from the base of the calyx and alternate with the lobes. *Stamens* 8, arising between the disc and the petals and opposite to the sepals and petals. *Anthers* bursting inwardly. *Ovarium* sessile free, bi-locular, surrounded at the base by an urceolate disc. *Styles* two, separate; dissepiments bearing placentæ on both sides. *Ovules* few, 3-8, two-rowed in each cell, seeds elliptical, somewhat kidney-shaped, small, very often clothed with hairs. *Radicle* pointing to the hilum. Trees, or shrubs, branches opposite. *Leaves* opposite, simple or compound. *Stipules* amongst the petioles. *Branches* axillary, solitary. *Flowers* small, deposited in spikes, or heads, sometimes 5-parted, and decandrous.

SPECIFIC CHARACTER.

W. venosa; *foliis* coriaceis sessilibus decussatis oblongo-ovatis irregulariter inciso-dentatis venosis; *floribus* verticillato-spicatis; *petalis* glabris linearibus pallide roseis; *bracteis sepalisque* pubescentibus; *capsulis* hirsutis. *Floribus* decandris.

Leaves leathery, sessile, crosswise, opposite, oblong, ovate, irregularly incisely-toothed, veined; *flowers* in whorled spikes; *petals* smooth, linear, pale rose colour; *bracts* and *sepals* pubescent; *capsules* hairy. *Flowers* containing ten stamens.

Descr.—Stem and the whole plant rigid, and of a reddish colour. Leaves leathery, sessile, oblong, ovate, alternately crossing each other, smooth on the upper side, and of a dark green colour, the under paler, somewhat pubescent, and strongly veined with red-coloured veins; margins deeply and irregularly toothed. Flowers in long dense whorled spikes, at the base of which are about eight irregular involucral leaves, hairy, toothed, and strongly veined; each whorl is divided into three parts, supported by a common peduncle, which is hairy, and from which issue about nine hairy pedicels, three times the length of the peduncle, each bearing a solitary flower; at the base of the pedicels are two or more linear-lanceolate somewhat toothed bracts, and veined in a similar manner to the involucral leaves. Sepals five (not four), hairy, ovate, lanceolate, of a pleasing rose colour; petals linear, smooth, twice as long as the sepals, and of a very pale rose colour. Stamens ten (not eight), smooth, twice as long as the petals. Anthers globular, yellow, styles two, the length of the stamens, somewhat divaricate, smooth. Stigma minute. Ovarium strigosely hairy; seeds white, smooth.

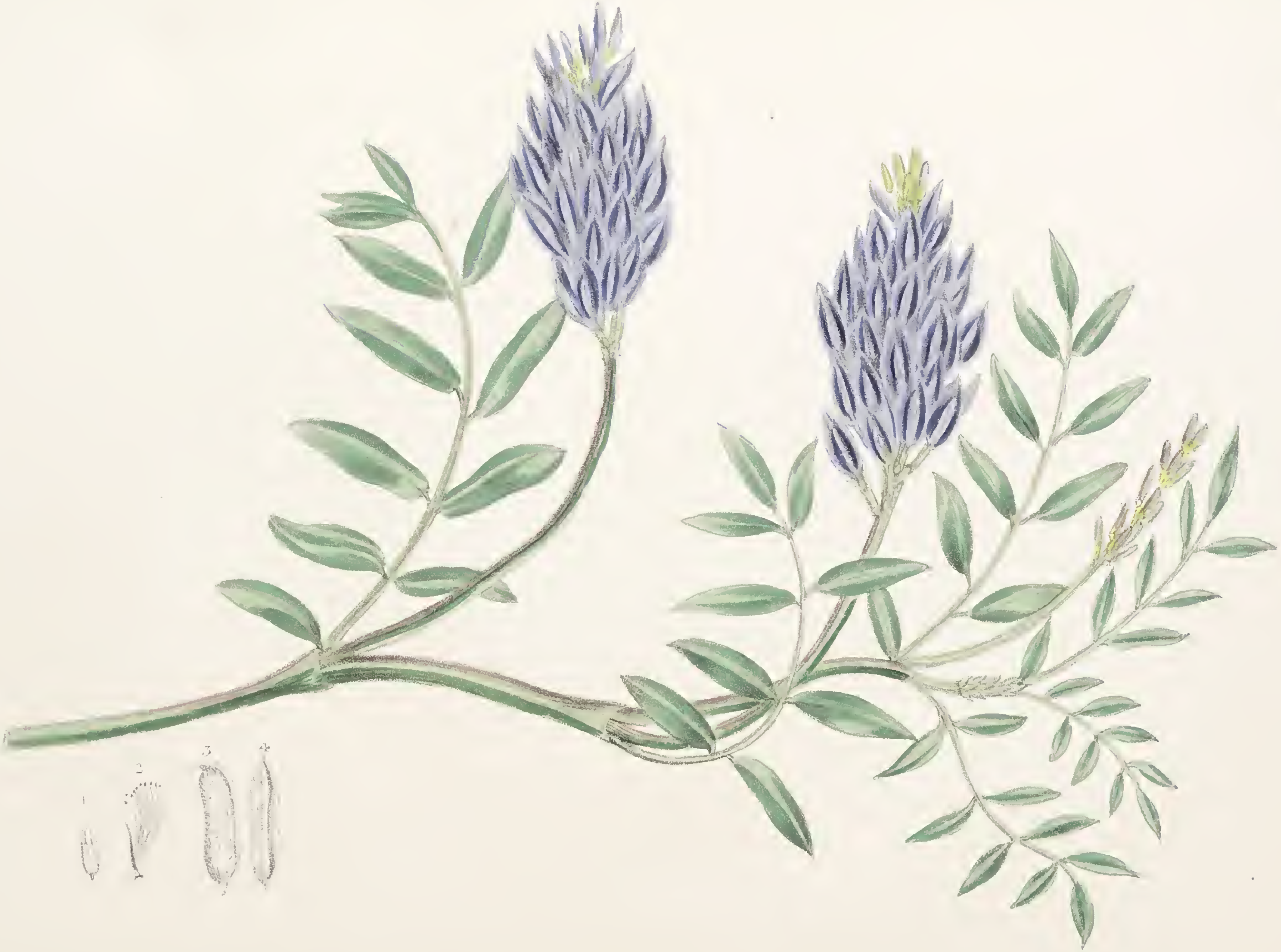
THIS very distinct and pretty species is in the collection of the Birmingham Botanical and Horticultural Society, and was raised from seeds which were collected in New Holland and sent to that establishment in the year 1836. It is a plant of slow growth, and of a rigid habit. It possesses a pleasing and singular appearance, having its dense spike of flowers crowned with purple leaves, its stem red, and its leaves strongly veined with red. It is very nearly related to the genus Dieterica Seringa, but from that genus it is distinct, as the calyx is neither large nor deciduous, but after flowering collapses and envelops the ovarium. Whether it will perfect its seed or not is at present uncertain, but the ovarium enlarges, and immature seeds are at present enclosed.

It requires the protection of the greenhouse during the winter, and ought to be potted in a mixture of peat, loam, and sand. It may be increased by cuttings, but from its very slow growth and peculiar habit that method of propagation must be very tardy; and if it should not perfect seeds, it will of necessity be a scarce plant in collections.

The genus is named after J. W. Weinmann, a German botanist. The specific name is from the Latin venosus, signifying veined, in reference to the strong and conspicuous veins of the leaves.

Fig. 1, a flower magnified; its anterior portion removed for the purpose of showing the insertion of the petals, placed alternately with the lobes of the calyx; 2, the germ hairy, and surmounted by two styles.

N° 66



Astragalus Laxmanni.

A. Green del.
Day & Haghe Lithrs to the Queen.

ASTRAGALUS LAXMANNI.

(*Laxmann's Astragalus.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DIADELPHIA DECANDRIA.	LEGUMINOSÆ.

GENERIC CHARACTER.

Astragalus (De Cand.) *Calyx* 5-dentatus. *Corolla* carinâ obtusâ. *Stamina* diadelphia. *Legumen* biloculare aut semi-biloculare, suturâ inferiore introflexâ. Herbæ aut suffrutices.—*De Cand. Prod.* vol. ii., p. 281.

Calyx five-toothed. *Corolla* with an obtuse keel. *Stamens* in two sets, 9 and 1. *Legume* two-celled or nearly so, having the lower suture bent inwards.

SPECIFIC CHARACTER.

A. Laxmanni; (Jacq.) diffuso-procumbens glabriusculus; *foliolis* 6-8 oblongis; *stipulis* folio brevioribus; *spicis* oblongis pedunculatis folio longioribus; *vexillo* alis longiore; *calycibus* nigricantibus; *leguminibus* oblongis villosis; *floribus* cæruleis.

Stem diffuse-procumbent, smoothish; *leaflets* from 6-8, oblong; *stipules* shorter than the leaves; *spike* oblong, pedunculate, longer than the leaves; *standard* longer than the wings; *calyxes* covered with blackish hairs; *legume* oblong, villous; *flowers* blue.

Descr.—Stem diffuse, procumbent, minutely covered with blackish hairs. Leaves containing about 6 to 8 leaflets, oblong lanceolate, somewhat mucronate. Flowers numerous, in oblong spikes, pedunculate, longer than the leaves; peduncles covered with close depressed blackish hairs. Standard narrow, elliptical, longer than the wings. Wings linear, longer than the keel. Keel obtuse. Calyx densely covered with blackish hairs, which are more conspicuous in the calyx of the unexpanded flowers than in those which are expanded, and divided into five subulate portions. Bracts ovate, acuminate, shorter than the calyx. Stamens diadelphous, containing nine combined, and one free, smooth. Style the length of the stamens, smooth. Stigma minute. Ovarium densely covered with white hairs.

This is a pretty, hardy herbaceous plant, bearing long spikes of pleasing blue flowers. It is a native of Siberia, and was introduced about the year 1804. The plant from which our drawing was taken was growing in the garden of the Birmingham Botanical and Horticultural Society, raised from seeds presented to that establishment by Dr. Fisher, of St. Petersburgh. It should be planted in rather a strong soil, and may be increased by dividing in the spring, or by seeds when they ripen.

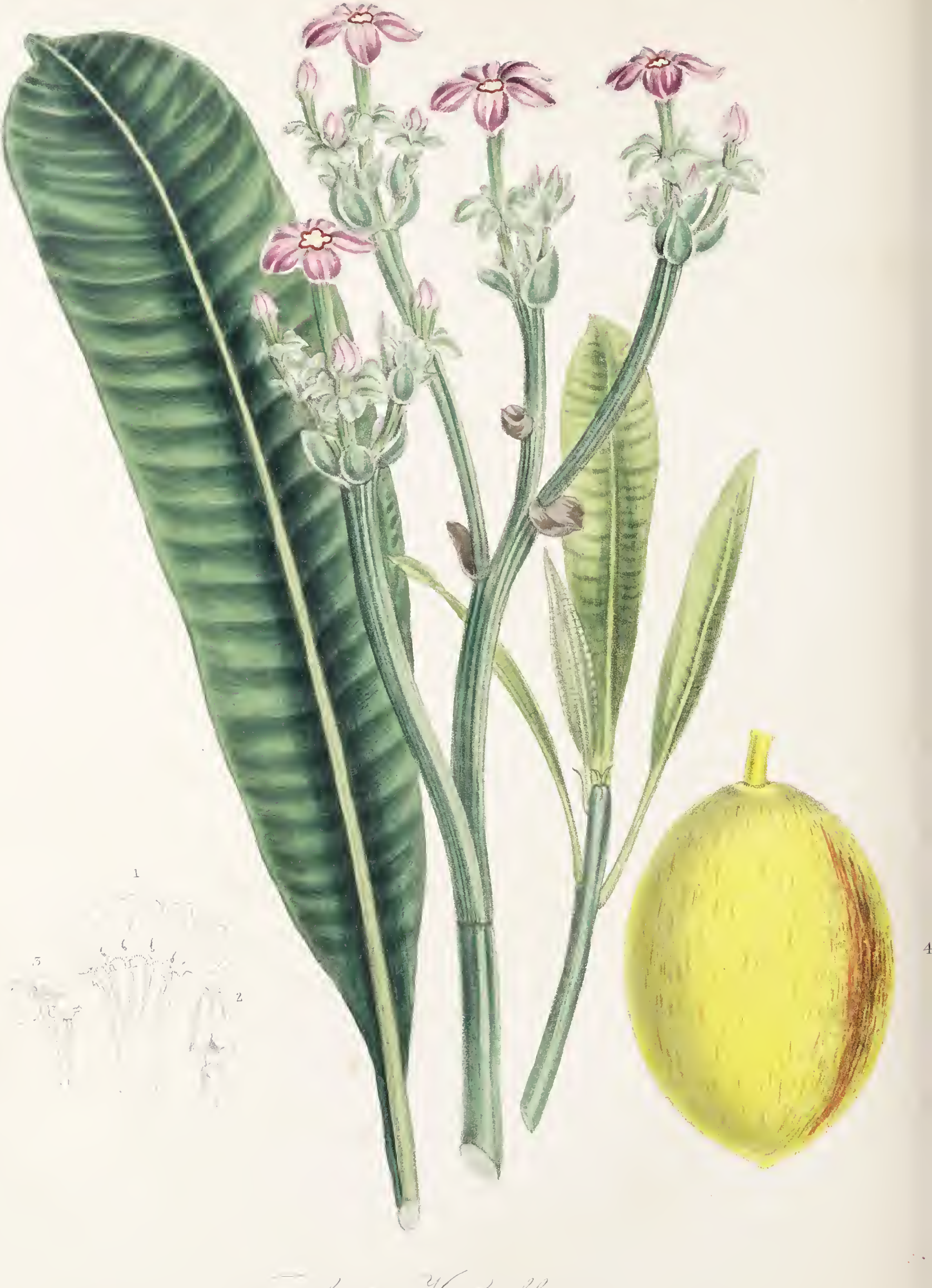
It does not appear so hardy as some of the other species, for the last winter destroyed most of the plants in the garden.

From this genus of plants (which comprehends upwards of 250 different species) is obtained the gum tragacanth of commerce. For some years it was considered to be the produce of the *A. tragacantha*, on the authority of Tournefort, who visited Mount Ida and Mount Lebanon; but La Billardiere, who afterwards travelled in the same places, found that Tournefort had been mistaken, and that the gum tragacanth was not collected from *A. tragacantha*, but from a different species, to which he gave the name of *A. gummifer*. A subsequent traveller, Mr. Olivier, who has since visited the East, affirms that the gum is not collected for commerce from either of the above species (unless it be in very small quantities), but that the bulk of what is sold in the markets is obtained from a species entirely new, and to which he has given the name of *A. verus*. There is no doubt, however, that all the above species, as well as *A. creticus* and perhaps some others, afford more or less of that peculiar gum denominated tragacanth, and which chemical analysis has shown to consist almost entirely of pure *cerasin*. The power of this gum to render water viscid, is about twenty-four times as great as that of gum-arabic. It is employed medicinally as a demulcent, and enters into the composition of various lozenges and other confectionary. The gum exudes in summer, more or less copiously, according to the heat of the weather, in tortuous filaments, which are allowed to dry on the plants before they are collected.—" *A. tragacanthoides* is esteemed among the Kalmucs as a febrifuge; and a decoction of *A. exscapus* is said to afford great relief in the distressing nocturnal pains of chronic rheumatism, and those which accompany certain other cachectic disorders."

The seeds of a few, as of *A. Boetica*, are, like those of *Phaca Boetica*, roasted and ground in some places, instead of coffee, for which purpose the plant is cultivated in Sweden and Siberia. The seeds of *A. cicer* are used as food for children, and also as forage for horses. The roots of *A. aboriginorum*, which are long and yellow, like liquorice, are, in Arctic America, where it is a native, collected as an article of food by the Crees and Stone Indians; the roots of *A. Ammodytes*, which are also sweet, are used in Siberia instead of liquorice. The leaves of *A. glycyphyllus* have a sweetish taste when first chewed, which soon changes to a nauseous bitter; hence this plant, although indigenous here, is left untouched by cattle.

Fig. 1, the 5-toothed calyx; 2, the diadelphous stamens; 3, the legume; 4, the same, showing its inferior, introflexed suture.

No 67



Tanghinia Veneniflua.

R. Mills del

Day & Haghe Lithrs to the Queen

TANGHINIA VENENIFLUA.

(*Poison-flowing Tanghin.*)

LINNEAN SYSTEM.	NATURAL ORDER.
PENTANDRIA MONOGYNIA.	APOCYNACEÆ.

GENERIC CHARACTER.

Tanghinia (Aub. du Pet. Thouars). *Calyx* 5-partitus, persistens. *Corolla* decidua calyce longior hypocrateriformis; *fauce* subpentagonâ dilatatâ 5-dentatâ; *limbo* plano contorto 5-lobo. *Stamina* 5; *filamentis* brevissimis dilatatione tubi insertis, tuberculoque glanduloso ad basin cujusque disposito. *Antheræ* crassæ cordiformes conniventes. *Ovarium* bilobum. *Stylus* 1, tubi longitudine equalis. *Stigma* capitatum bilobum, annulo glanduloso cinctum, thecis antherarum inclusum. (*Fructus* ovatus drupaceus; *nux* fibrosa utrinque acuta, unilateraliter fissa. *Seminis integumentum* membranaceum fibris tenuibus tunicæ nucis solummodò adhærens. Albumen crassum concavum, in sicco corneum). Cotyledones planæ tenues subcordatæ. Embryo superus inversus.—*Bojer.*)

Calyx 5-parted, persistent. *Corolla* deciduous, longer than the calyx, salver-shaped; *throat* somewhat pentagonal, dilated, 5-toothed; *limb* spreading, contorted, 5-lobed. *Stamens* 5, with very short filaments inserted in the dilated part of the tube, with a glandular tubercle at the base of each. *Anthers* thick, heart-shaped, connivent. *Ovarium* 2-lobed. *Style* 1, equal with the length of the tube. *Stigma* capitate, 2-lobed, girded by a glandular ring, and enclosed by the connivent anthers. (*Fruit* ovate, drupaceous; *nut* fibrous, acute at both ends, cloven on one side. *Integument* of the seed membranaceous, merely adhering to the tunic of the nut by slender fibres. Albumen thick, concave, horny when dry. Cotyledons flat, thin, somewhat heart-shaped. Embryo superior, inverted.)

Tanghinia Veneniflua.—*Poiret in Encycl. Bot. Suppl.* vol. v., p. 283.

Cerbera Tanghin.—*Hooker*, *Bot. Mag.* t. 2968.

Descr.—A stove shrub six feet high (in its native country attaining thirty feet and upwards), abounding in an acrid, milky juice. Trunk covered with a smooth ash-coloured bark, the younger branches somewhat herbaceous, greenish, glabrous. Leaves from five to eight inches long, coriaceous, glabrous, shining, obovate-lanceolate, apiculate, with a cartilaginous revolute margin, remarkably attenuated at the base, somewhat crowded towards the extremities of the branches; primary veins numerous, transverse, terminating and uniting in a submarginal one. Flowers rose-coloured, in terminal somewhat corymbose panicles. Peduncles and pedicels mostly biternate, articulated at the base, slightly compressed, angular, fleshy. Bracteas ovate, acute or obtuse, concave, deciduous. Calyx green, segments ovate, acute, two of which are narrower than the others. Corolla with a green tube eight lines in length, pubescent within; scales of the throat very hairy, placed immediately above the anthers; limb rose-coloured, divisions spreading, undulated, unequal-sided, obtuse or acute, occasionally truncate, at length reflexed. Anthers 2-celled; dehiscing laterally, with a dark-brown *connectivum* terminated at the apex by an acute membranous appendage. Ovarium 2-lobed; lobes 1-celled, 1-seeded. Style 1, didymous, twisted towards the apex.

This plant, which is a native of Madagascar, must be viewed with more than common interest, on account of the horrid purposes to which the fruit is frequently applied by the natives. It is customary in that island to use it as a kind of ordeal for the detection of theft or any other crime, where proof is wanting; a practice which is greatly encouraged by the credulity and superstition of that benighted people. The kernel is said to be bruised on a stone, and infused in some liquid which the accused person is compelled to drink. If he persist in his innocence, and has no witnesses, then three bits of chicken-skin are added to the dose, and he is obliged to swallow rice water till the poison is rejected by the stomach; when, if the three pieces of skin are not also vomited, he is considered guilty of the crime in question *.

The plant was first introduced to this country through the medium of Charles Telfair, Esq., who sent seeds to Bury Hill, where the original plant was raised. Several plants were afterwards struck from cuttings, one of which is in the collection of the Birmingham Botanical and Horticultural Society, and for which the Institution is indebted to Charles Barclay, Esq., M.P., who presented it with many other valuable plants, upon the formation of the Society's Gardens in 1831, where it has recently flowered in great perfection, and probably for the first time in this kingdom.

It should be potted in peat, loam, and sand, with plenty of drainers in the bottom of the pot. It may be propagated (though with difficulty) by cuttings of the old wood taken off with a heel, otherwise they will rot, as the pith is of considerable diameter, which with the milky juice, soon causes them to decay. The cuttings should be put into sand, and covered with a bell-glass.

Fig. 1, corolla with its tube laid open to show the insertion of the stamens, the glandular tubercles immediately beneath, and the woolly scales of the throat magnified; 2, anther magnified; 3, the style and capitate stigma magnified, with a small portion of the corolla, to show the manner in which the anthers cover the stigma; 4, the fruit, copied from the plate in Sir W. J. Hooker's Bot. Misc.

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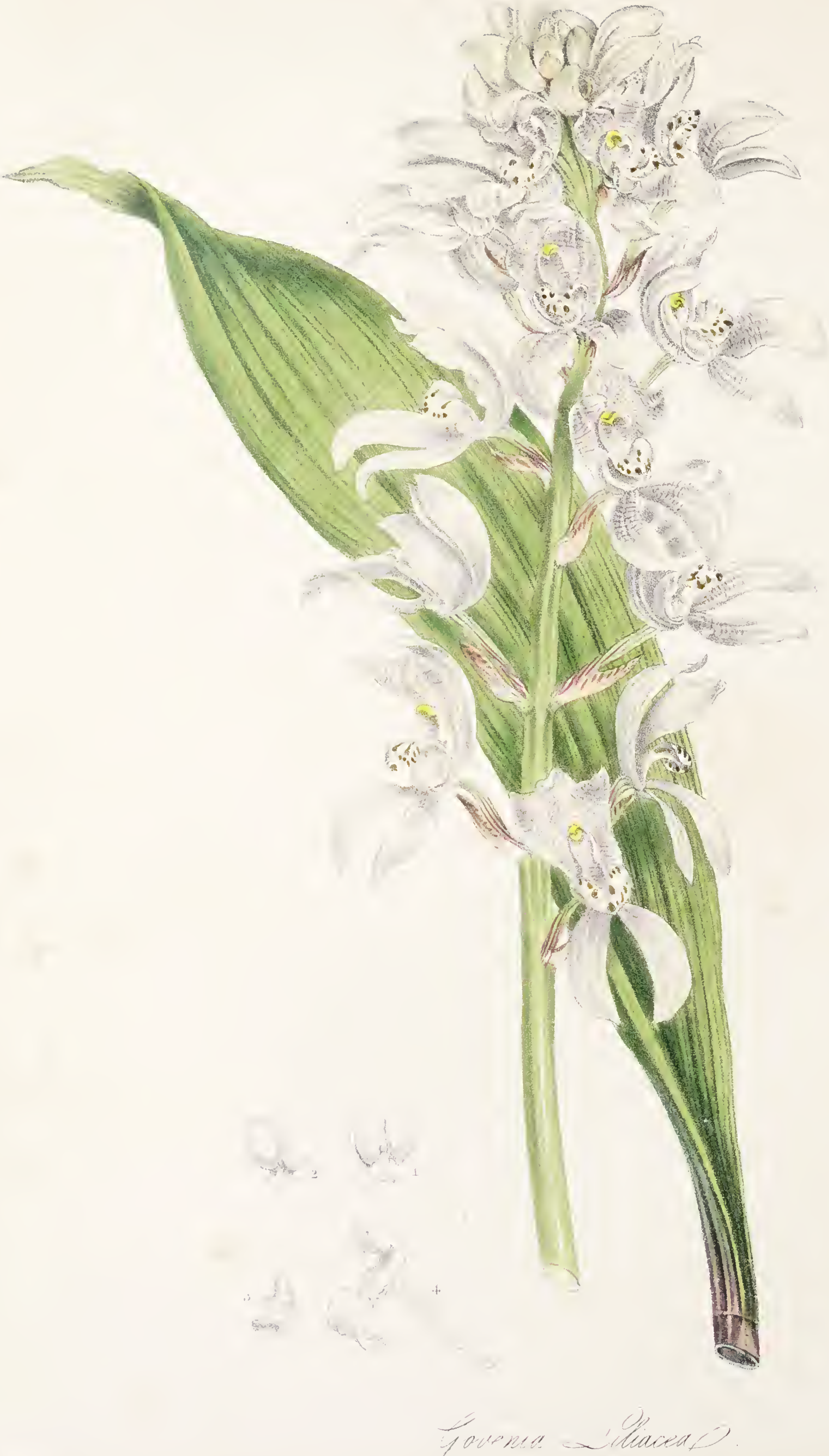
* For further particulars respecting the administration of the Tanghin as an ordeal, we refer our readers to a future page.

N° 9



Govenia Liliacea

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Day & Haghe Lithrs to the Queen

GOVENIA LILIACEA.

(*Lily-flowered Govenia.*)

LINNEAN SYSTEM.
GYNANDRIA MONANDRIA.

NATURAL ORDER.
ORCHIDACEÆ, § VANDEÆ. (*Lindl.*)

GENERIC CHARACTER.

Govenia (Lin.) *Perianthium* bilabiatum. *Sepala* lateralia falcata, labello supposita, basi paululùm connata, supremo paulò majora. *Petala* sub sepalo supremo conniventia, breviora, obliqua. *Labellum* integerrimum, ecalcaratum, concavum, cum basi parum productâ columnæ articulatum, sessile. *Columna* basi paulò productâ, teres, subfusiformis, apice utrinque marginata. *Anthera* calyptriformis, 1-locularis. *Pollinia* 4, solida, incumbentia, caudiculâ brevi, glandula minore triangulari. *Terrestres*. *Folia* plicata; *spicæ* radicales, multifloræ. *Flores* speciosi. *Lindl. Gen. et Spec. Orchid.* 153.

Perianth 2-lipped. Lateral *sepals* sickle-shaped, placed beneath the labellum, a little connate at the base, rather larger than the upper one. *Petals* connivent under the upper sepal, shorter, oblique. *Lip* very entire, spurless, concave, articulated with the slightly-lengthened base of the column, sessile. *Column* a little lengthened at the base, terete, somewhat spindle-shaped, with a margin on each side of the apex. *Anther* extinguisher-shaped, 1-celled. *Pollen-masses*, 4; solid, incumbent, with a short caudicula, smaller than the triangular gland. *Terrestrial* plants. *Leaves* folded; *spikes* radical, many-flowered. *Flowers* handsome.

SPECIFIC CHARACTER.

G. liliacea; *labello* ovato basi imâ cucullato; *spicâ* oblongâ; *scapo* univaginato; *bracteis* oblongis cucullatis; *foliis* obovato-lanceolatis plicatis radicalibus scapo brevioribus; *radice* tuberosâ. (Lindl.)

Labellum ovate, hooded at the base; *spike* oblong; *scape* 1-sheathed; *bracteas* oblong, hooded; *leaves* obovate-lanceolate, plaited, radical, shorter than the scape; *root* tuberous.

Govenia Liliacea.— Lindl. Bot. Reg., New Ser., p. 13.

Maxillaria Liliacea. La Llave et Lex. Nov. Veg. Descr. 12.

Descr.—Plant *terrestrial*, with a subglobose, solid, tuberous root. Leaves two, radical, broadly lanceolate, plaited, 3-nerved, gradually narrowed towards the base, and terminating by an apparent articulation in a hollow cylindrical purplish stem, from 10 to 12 inches long, through which emerges the second leaf, the cylindrical stem of which is closely embraced by the first: these are invested by three or four dark purple entire *sheaths*, which also include the scape. Scape erect, cylindrical, from one and a half to two and a half feet high, emerging directly from the tuber. Flowers arranged in a loose thyrsus-like spike, white, the petals delicately streaked with pale purple. Bracteas oblong, lanceolate, hooded, one of which is placed at the base of each pedicel. Labellum keeled, ascending, parallel with the column, slightly spotted with yellow at the base. *Column* arcuate, convex posteriorly, deep-excavated in front, margined throughout its whole length, but broadly so at the apex. *Pollen-masses* four, incumbent, of which the two posterior are the smallest.

This rare and elegant species of Govenia is in the collection of George Barker, Esq., of Springfield, by whom it was imported. It flowered last year for the first time in this country, and was figured by Professor Lindley in the Botanical Register in March last; but the plants having scarcely recovered from the effects of transplanting, had by no means that appearance of vigour and beauty which they presented this season. The flower-stems last year barely exceeded a foot in height, while this year they were upwards of two feet long; and one of them was more than two feet and a half, with a more than ordinary number of flowers.

It differs from G. superba (figured in vol. i. pl. 47,) in several particulars. The *labellum* of the present species is ovate, keeled, and hooded at the extreme base; in the former it is cordate. and channelled along the middle. The column too, which in the original species is *terete*, is in the present one deeply *excavated* in front, affording an instance of the difficulty of framing a generic character from a single species.

It is a native of Valladolid in Mexico, where it flowers in the summer months, and is known by the vernacular name of *Azuzena del Monte*.

It has very much the habit of Bletia, and will require similar treatment; namely, the protection of a humid stove when growing, but must be kept more cool and dry when in the dormant state. It should be potted in light sandy peat, with abundance of drainers in the bottom of the pot.

Fig. 1, Posterior view of the pollen-masses and caudicula; 2, anterior do; 3, anther-case; 4, the germ at right angles with the column; the lip reflexed. to show its articulation with the base of the column.

AN ECONOMICAL PIT FOR FORCING DAHLIAS, &c.

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

An economical pit for the forcing of dahlias, tender annuals, striking cuttings, and other purposes, may be made by building a dry cellar of from four to six feet in depth under an ordinary pit, and of the same length and width as the pit. There should be a close door at one side, and an aperture at each of the other ends six inches square.

Over the cellar across the pit, place either iron or wooden bearers, upon which lay large slates, closely cemented, to form the bottom of the pit. Place upon the slates about nine inches of dry sawdust, for plunging pots of dahlias, or whatever is intended to be forced. Other substances besides sawdust will do, such as sand, or half-decayed tan, but sawdust is preferable, being an excellent substance for retaining heat.

When the forcing is to commence, stop the apertures of the cellars with straw, or hay, and get one or more loads of *quite fresh* stable dung, according to the size of the pit. The dung must be well shaken up, and thrown into the cellar in a heap. The steam arising being pent up in the cellar, gives a genial heat to the sawdust, equal to that of a dung hotbed, and without the moisture being imbibed, which is so destructive to some plants early in the spring, and more particularly to dahlias.

When the heat is getting too high, the apertures may be opened a little, so as to lessen the heat, and when getting too cold, the manure must be taken out, and watered if too dry. If decayed too much, the rotted portion must be put aside for hotbeds, and fresh added to that in the cellar.

It will be perceived that this place is to make use of the heat arising from stable manure during the process of bringing it to a fit state for hotbeds, which by the usual process is lost. Upon commencing a pit of this construction for the first time, the safest way is to put in the sawdust and dung, and watch the heat until the operator can comprehend the management; a week's practice will teach him more than a page of directions. The pit is serviceable for all the purposes of a cold pit when not worked by dung.

ON THE ACCLIMATATION OF PLANTS.

Every degree of latitude of the globe which has as yet been visited by civilised man, is found to be furnished with its own peculiar tribes of the vegetable kingdom. In the Arctic regions, mosses, and lichens, and other minute genera, are only found to prevail. And in the low latitudes, under the direct influence of the sun, the most magnificent herbs and gigantic trees clothe the face of the earth. The only barren spots are the Arctic and Antarctic storm-washed rocks, and the sirocco-driven sands of central Africa.

The constitution of plants, however various, is always adapted to the climatic changes and circumstances on which they are found. If their habitat be exposed to severe frost, they are fortified against its destructive effects; if to the parching heat of a tropical sun, they are equally fitted to bear and thrive under it. All the intermediate latitudes, which are more or less temperate, have each their peculiar tribes of vegetation.

The intensity of cold in the high latitudes, and the torrid heat of the low, divide vegetation into two constitutionally separate parts; and though the natives of the frigid zone cannot long survive in tropical warmth, yet there are many tropical plants which are successfully cultivated in countries far to the north, even in Siberia. But this is not owing to their constitutional hardihood, but to the circumstance of their coming soon to perfection, that is in a summer of three months' duration. This description of plants are called annuals, because they are sown and ripen their seeds in the course of one summer. A great majority of the plants which embellish our flower-gardens are natives of warm latitudes, and though the temperature of our summers is sufficient for them, they are destroyed by the least visitation of frost.

There is another class of tropical plants which are perennials; the roots of these survive our winters, but their stems are invariably killed down by frost, and there are a few both herbs and shrubs, which, though natives of the torrid zone, are nevertheless proof against our severest frost. Of these, we may only instance the common white jasmine, which is a native of India.

The desire to naturalise (like the well-known jasmine) the many beautiful flowering shrubs and trees natives of warmer skies, is natural to every lover of plants in this and other northern countries. In furtherance of this object, many experiments have been made to ascertain whether the denizens of warmer climes may be enured to the chilly air and frost of our northern latitudes. Some botanists have imagined that tender plants have a predisposition or constitutional mutability by which, whatever may be the temperature of the station they are placed in, they will accommodate themselves thereto. But no rule of practice has been founded on this idea; on the contrary, nothing but the actual and gradual exposure of the plants we wish to acclimatize, can be a certain test of their ability to bear the rigours of a colder climate. By such trials the Aucuba Japonica was found to be perfectly hardy. Many South American, Chinese, and Australian plants have been found to be half-hardy; and before this last winter (1837-8) many curious kinds from the above-mentioned countries which were supposed to be hardy are now dead or nearly so; the roots only of many of them remain unhurt. But the frost of last winter was uncommonly severe, many of our hardiest natives having suffered.

That the texture and consequent susceptibilities of plants are varied according to the aspect, or moisture, or poverty of the soil, is perfectly obvious. The growth is retarded by cold, drought, and by a want of sufficient nourishment;

and accelerated by heat, humidity, and by a rich generous soil. Of course the plants on the north side of a gravelly hill, whether indigenous or exotic, are of a firmer texture and much more hardy than those on a rich southern slope. This is the reason why plants in an irriguous valley are sooner destroyed by frost than those on the bleak hill, and also why plants tenderly nursed up are sooner damaged by a colder temperature than if reared in full air. The membranes in the last case being more compact and juiceless; in the other more attenuated and succulent; and according as these circumstances are more or less extreme, the plant is more or less liable to be destroyed by frost.

The action of frost upon vegetables shows itself in two ways; some plants are only withered by it, but without any disruption of the membranes; and on the return of a thaw the leaves regain their rigidity and vigour as completely as before. Other plants, from their natural or accidental succulence, delicacy of membrane, and abundance of watery sap, are by the internal crystallization of their juices rent into shreds and totally dismembered.

Plants having a resinous sap seldom suffer from frost, because no crystallization of such sap (to burst the tubular structure) takes place, and thus such plants escape.

The effect of extreme heat and moisture on vegetation excites to its utmost expansion. Plants, natives of the temperate zones, if exposed to such excitement for a longer time than their natural summer, become eventually quite exhausted, and die in a few months. This happens to many European plants when carried to India, such as the pear and apple trees; and even the grape-vine lives in a very weakly condition, and is but partially fruitful, unless grown on the highest hills.

These are a few of the circumstances which affect vegetation in the different climates of our globe; and the reason why the plants of one latitude do not thrive in every other.

If there be one circumstance which demands the admiration of the student of vegetable nature more than another, it is the equal distribution of the most useful plants over the face of the whole earth. A distribution which could only be effected and planned by infinite power and wisdom! Where vegetation is deficient, there animals are mostly carnivorous; and where vegetables abound, roots, stems, leaves, and fruit, are, for the most part, the food of every living creature. In those regions where vegetables are scanty, a short and hot summer allows the industrious hind to cultivate a few of the tropical cereals for the sustentation of himself and his fellows; such as wheat, rye, and brank, these serve them for bread corn, and grain, whence an ardent spirit may be obtained. In the warmer parts of the temperate zones, and between the tropics, where the field labourers and travellers are faint from the ardour of a vertical sun, delicious and cooling fruits are found on almost every tree, and which are free to every one without limit, save what a regard for health imposes.

DOUBLE VARIETIES OF POLYANTHUS, PRIMROSE, &c.

To grow double polyanthuses and the numerous varieties of double primroses, it is necessary to prepare a border purposely for them, as but few soils or situations suit their habits without some preparation. The situation should either be an east or north border against a wall or hedge high enough to shade them from the sun for several hours in the middle of the day. The soil must be removed to the depth of eighteen inches, the bottom to be made perfectly dry if not previously so, by draining. Cover the bottom four inches deep with brickbats or small stones, over which lay a covering of thin turf to prevent the soil getting down amongst the stones; over this lay the soil, which should be a mixture of one half maiden loam from an old pasture, chopped up with the spade, one fourth peat or vegetable soil from decayed leaves, and one fourth of coarse sand. Plant the bed in May or September; and if the winter is severe, some branches of broom or birch may be stuck amongst them to break the severity of the frost and wind. Water when necessary during dry weather. When the plants throw up roots near or above the surface, case over the bed with an inch thick of fresh compost. Divide the plants when too strong in spring or September. The same preparation, with the addition of another fourth of rotted cow-dung, will do for the florists' varieties of polyanthus.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

RANUNCULACEÆ. Juss.

Delphinium intermedium, *var.* palmatifidum. De Cand. Dark variable Larkspur. *Bot. Reg.* N. S. t. 38. This is one of the handsomest of the perennial Delphiniums; its colour, externally, is rich blue, internally lilac. It is distinguished from the other species by having the lower petals deeply divided into two narrow lobes, the ends of which are terminated by loose shaggy hairs, whilst the disc is covered by a short tuft of brown hairs. The leaves also are not cordate, but have the sides of their base diverging from the petiole at a right angle, so as to form a straight line from one side of the leaf to the other.

It grows five or six feet high, flowers in June and July, and is well suited to the back ground of the garden. *Bot. Reg.*

PAPAVERACEÆ. D. C.

Platystemon leiocarpum. Fisch. et Meyer. Smooth-fruited Platystemon. This is so near to Platystemon Californicum in habit, size, colour of the flowers, and foliage, that it would be difficult to say which was which without examining the ovarium. In P. Californicum the ovarium is villous, covered with silky hairs;

in P. leiocarpum, as the name implies, the ovarium is smooth. It therefore can only be considered a smooth-fruited variety of P. Californicum. The plant is now in flower in the Birmingham Botanic Garden, raised from seeds presented by Mr. Hunneman.

LEGUMINOSÆ. Juss.

Astragalus aduncus. Beib. Beaked Astragalus. This is a very pretty species of astragalus, in the collection of the Birmingham Botanical and Horticultural Society, raised from seeds presented to that institution by Mr. Hunneman. It is perfectly hardy, having stood last winter without the slightest injury. It has much the appearance of A. onobrychis, both in the colour and shape of its flowers.

Astragalus campylorynchus. F. et M. Curved-beaked Astragalus. This is an annual, and a very insignificant species, with a diffuse habit. The peduncle is shorter than the leaves, and bears two almost inconspicuous flowers of a purplish colour, which are of short duration. It is of no value to the cultivator, and is only interesting as a botanical curiosity. It is in flower in the same establishment as the above species, and was raised from seeds presented by the same gentleman.

ROSACEÆ. Juss.

Pyrus arbutifolia. Hook. Arbutus-leaved Pyrus. *Bot. Mag.* t. 3668. This appears a free-flowering species, bearing delicate pinkish-white flowers. It is nearly allied to P. floribunda, Lindl., which Sir W. J. Hooker only makes B. *var.* It is a native of America.

COMPOSITÆ. TRIBE CYNAREÆ. D. C.

Centaurea depressa. Beib. Prostrate Blue Bottle. *Bot. Mag.* t. 3662. An annual, and a very brilliant species, much resembling the blue-bottle of our cornfields. It differs, however, from that species, the leaves being broader, and altogether of a stouter habit. It is a native of Iberia, and was introduced into this country by the Russian botanists.

LABIATEÆ. Juss.

Salvia canescens. Meyer. Hoary Sage. *Bot. Reg.* N. S. t. 36. This is a pretty species, allied, according to Mr. Bentham, to S. phlomoides. It was found by Professor C. A. Meyer inhabiting that rocky range of Caucasus which runs west of the Caspian Sea, on the banks of the river Anticeta, and about the mineral spring of Narzana. The leaves are covered with whitish wool, and the calyx bears a quantity of green hair and viscid glands. The flowers are of a deep purple. It is in the collection of the London Horticultural Society, raised from seeds received from Professor Ledebour, of Dorpat. It is perennial, and quite hardy; it may be cultivated in any common garden soil, and is well adapted for rock-work. *Bot. Reg.*

SCROPHULARIACEÆ. Lindl.

Nemesia floribunda. Lehm. Many-flowered Nemesia. *Bot. Reg.* N. S. t. 39. This is a delicate annual, much resembling the genus Linaria. Its flowers are whitish tinted with orange. This is the same plant which was named N. affinis by Mr. Bentham, in Sir W. J. Hooker's "Companion to the Botanical Magazine," he then not having seen the seed list of the Hamburgh Garden. It is a native of the Cape of Good Hope. The seeds should be sown after the manner of Linarias, and they will flower from June till August. *Bot. Reg.*

CONVOLVULACEÆ. Juss.

Ipomæa Bonariensis. Hook. Buenos Ayres Ipomæa. *Bot. Mag.* t. 3665. This is not a species possessing brilliant colours. It was raised from seeds sent to this country in the year 1826. That gentleman observes that it is common on the ditch banks about Buenos Ayres, and who observes, that the plant has a large tuberous root. It thrives readily in a stove, and flowers in August.

ERICACEÆ. Lindl.

Rhododendron nudiflorum. *var.* scintillans (hybrid). Sparkling Rhododendron. *Bot. Mag.* t. 3667. This is said to be a most beautiful hybrid, and growing vigorously in the American border of the Glasgow Botanic Garden. It was first raised by Mr. Gowen, the gardener at High Clere, in the following manner, which he communicated to the Botanical Register. "This Azalea was raised at High Clere in the same year with those already figured, and is a seedling from azalea coccinea (nudiflora *var.* coccinea) major, impregnated with the pollen of azalea pontica." *Bot. Mag.*

ONAGRARIÆ. Juss.

Fuchsia cylindracea. Lindl. Cylindrical-flowered Fuchsia. *Bot. Reg.* N. S. p. 54. This is a very pretty species of Fuchsia, raised from Mexican seeds presented to the London Horticultural Society by G. Barker, Esq. It belongs to the same section as F. microphylla. Mr. Barker also presented seeds to the Birmingham Botanical and Horticultural Society, from which several plants have been raised, and two fine ones are now in flower in that establishment. The flowers are a bright scarlet, solitary, on long fine peduncles.

This species, from the singular colour of its flowers, and the freedom of its growth, has every appearance of being a favourite amongst cultivators. We intend giving a further description and plate of it in a forthcoming number.

MONOCOTYLEDONES.

IRIDACEÆ. Lindl.

Tritonia fucata. Lindl. Painted Tritonia. *Bot. Reg.* N. S. t. 38. This is a very beautiful species, bearing a secund spike of orange-red flowers. It flowered in the collection of the Honourable and Reverend W. Herbert, in the autumn of 1837.

It is a native of the Cape of Good Hope, is perfectly hardy, and increases abundantly by the root. Mr. Herbert having failed to flower the plant (as had those also to whom he had furnished part of the increase), says, "At the end of the last autumn (1830), it occurred to me to have dung laid on the patches which were growing in the garden soil, and the result has been the production of a flower stem this summer. I doubt not that manure is the requisite to make it flower freely." The spike of flowers continues about a month. *Bot. Reg.*

This plant being hardy, will be a valuable addition to the ornamental flower garden.

COMMELINEÆ. BROWN.

COMMELINA ORCHIOIDES. Booth. Orchis-like Commelina. *Bot. Reg.* N. S. p. 53. This plant was raised from roots sent to Sir Charles Lemon, Bart., M.P., in the year 1838, by Mr. John Rule, the zealous and active superintendent of the Real Del Monte Mines in Mexico, and it flowered in the stove at Carclew in May last. Its flowers are not showy, but it is an interesting plant to botanists. *Bot. Reg.*

ASPHODELEÆ. JUSS.

ORNITHOGALUM GEMINIFLORUM. Herb. Twin-flowered Bethlehem Star. *Bot. Reg.* N. S. p. 56. This is a small white-flowered species, resembling O. chloroleucum, from which it differs in the flowers being in pairs, and opening one before the other, instead of growing singly. *Bot. Reg.*

ORCHIDACEÆ. LINDL.

TRIBE MALAXIDEÆ. § DENDROBIEÆ. LINDL.

DENDROBIUM FORMOSUM. Wall. Beautiful Dendrobium. *Bot. Reg.* N. S. p. 49. This is a noble species, with large ivory-white flowers, which are unrivalled for beauty. It was imported by His Grace the Duke of Devonshire, and collected in the East Indies by Mr. Gibson, his Grace's collector. The flowers grow at the end of a leafy stem, and are between three and four inches in expansion, with every part of the most pure and transparent white, except one delicate lozenge-shaped buff-coloured blotch in the centre of the lip. Dendrobium formosum must stand amongst the foremost of the Orchidaceæ in point of beauty. *Bot. Reg.*

DENDROBIUM STUPOSUM. Lindl. Towy Dendrobium. *Bot. Reg.* N. S. p. 52. This is another species imported by his Grace the Duke of Devonshire, and also in the collection of Messrs. Loddiges. It is an erect-growing species, with the habit and appearance of D. candidum. The flowers are of the same white colour, and but little smaller; the labellum, however, has a dark orange callus below its point, which is thickly covered with coarse tow-like hairiness. *Bot. Reg.*

EPIDENDREÆ. LINDL.

EPIDENDRUM IONOSMUM. Lindl. Violet-scented Epidendrum. *Bot. Reg.* N. S. p. 49. "The western world," says Dr. Lindley, "wants no violets where this charming plant is found, for it fills the air with fragrance as delicate and delicious as that of our favourite flower. The flowers are rather large for those of an Epidendrum of this class, of a dull reddish green colour, with a lip delicately streaked with deep lilac. It was imported by Messrs. Loddiges from Essequibo. *Bot. Reg.*

Epidendrum viridi purpureum. Hook. Purplish green Epidendrum. *Bot. Mag.* t. 3366. An Epidendrum of no great beauty, a native of Jamaica, and imported by Mr. Horsfall of Liverpool, in whose collection it flowered. A plant has also flowered in the stove of the Glasgow Botanic Garden, which was sent to that establishment by Dr. D. M. Fayden. *Bot. Mag.*

CALENDAR OF GARDENING OPERATIONS FOR AUGUST.

Shift into larger pots all greenhouse and stove plants requiring it, and occasionally reset the greenhouse which are out of doors, to prevent them rooting into the ground on which they are set, otherwise they will begin to grow too vigorously, and receive a severe check when removed.

A few stove plants of those placed in the greenhouse may be put out of doors for a few weeks with advantage at this time.

Put in cuttings of greenhouse plants, particularly of Pelargonium, Verbena, Petunia, Anagallis, and other soft-wooded genera, that are wanted for planting out into the borders the following spring. When rooted they may be transplanted around the sides of small pots, five or six in a pot.

Sow Mignonette in pots, for winter and spring flowering.

Sow Californian Annuals, for spring flowering; all of them are so hardy as to endure the severity of any winter; they will also flower finer, and be more brilliant in their colours, than those sown in the spring.

Towards the end of the month the Pink pipings will require transplanting into stove beds; previous to which, when thoroughly rooted, the hand-glasses must gradually be removed, giving them air by raising them upon bricks, and increasing the quantity every two or three days until they can finally be removed.

Sow Stocks, and other hardy biennials, for flowering next season.

Pansies may occasionally be struck from cuttings throughout the month.

Stake all flowering plants, and keep them neatly tied up, particularly Dahlias, which soon get disfigured if not securely tied up.

Layer Carnations, Picotees, and Cloves.

Attend to the sowing of Annuals as they ripen.

Normandy cress for winter, may be sown towards the end of the month.

Many of the hardy shrubs may be successfully laid during this month, using the young shoots for that purpose.

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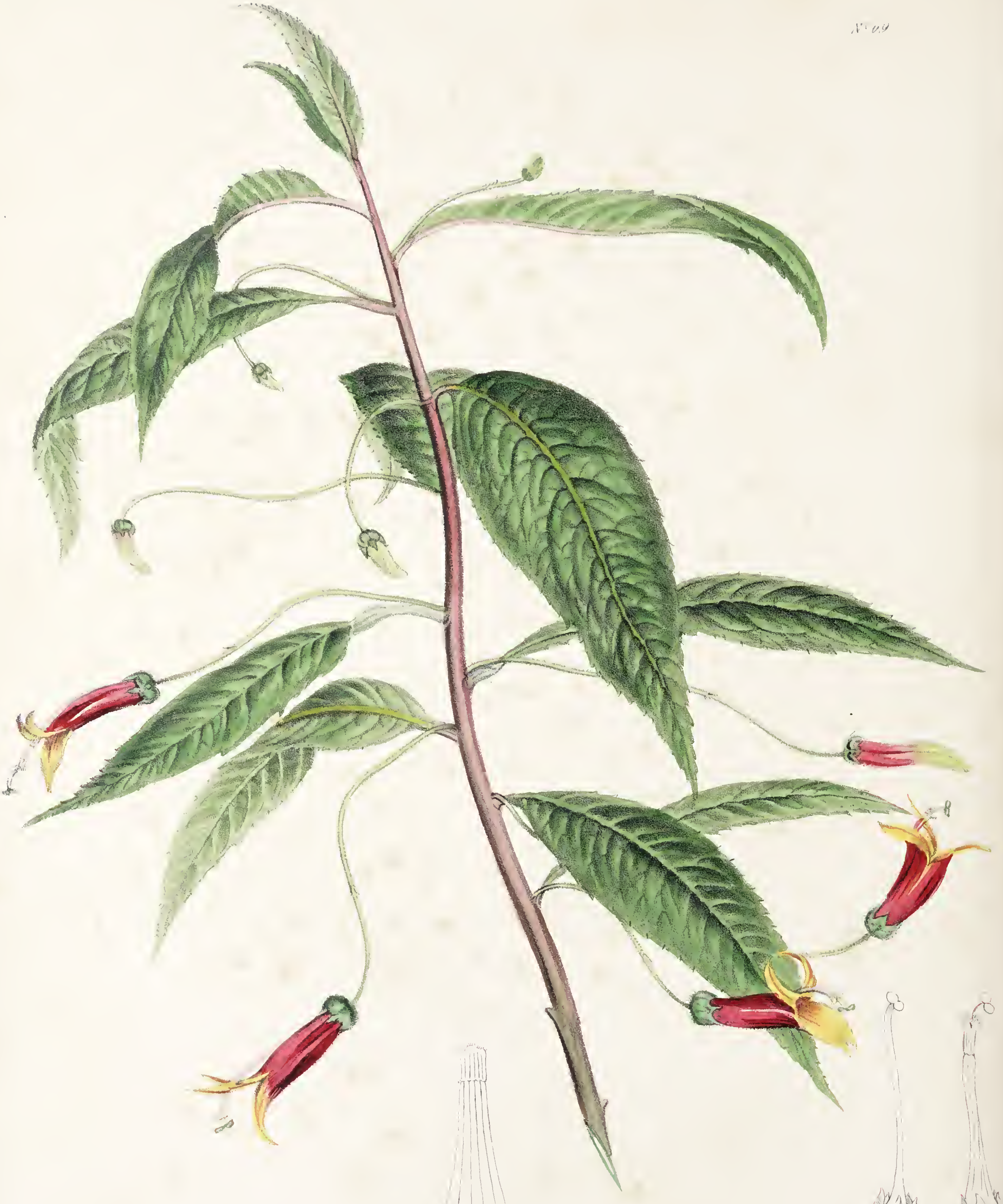


Siphocampylus bicolor.

SIPHOCAMPYLUS BICOLOR.

(*Two-coloured Siphocamphylus.*)

LINNEAN SYSTEM.	NATURAL ORDER.
PENTANDRIA MONOGYNIA.	LOBELIACEÆ.—(*Lindl.*)

GENERIC CHARACTER.

Siphocampylus (Pohl). *Calyx* hemisphericus, 10-costatus, 5-dentatus. *Corolla* tubulosa, bilabiata, apice reflexa; labio superiore bipartito; inferiore tripartito. *Filamenta* monadelpha. *Antheræ* coalitæ, apice penicillatæ. *Stylus* apice curvatus. *Stigma* bilobum, papillosum. *Ovarium* calyci adhærens. *Capsula* bilocularis, apice dehiscens. *Semina* innumera.

Calyx hemispherical, 10-ribbed, 5-toothed. *Corolla* tubular, two-lipped, reflexed at the top; upper lip 2-parted; lower lip 3-parted. *Filaments* combined. *Anthers* joined, brush-like at the apex. *Style* curved at the top. *Stigma* 2-lobed, papillose. *Ovarium* adhering to the calyx. *Capsule* 2-celled, bursting at the apex. *Seeds* numerous.

SPECIFIC CHARACTER.

S. bicolor; suffruticosus, glaber; *foliis* ovato-lanceolatis, acutis, irregulariter serratis; *floribus* axillaribus, solitariis; *pedunculis* hirsutis, bibracteolatis corollis longioribus.

Suffruticose, smooth; *leaves* ovate-lanceolate, acute, irregularly serrated; *flowers* axillary, solitary, *peduncles* hairy, with two bracts longer than the corolla.

Siphocampylus bicolor.—*Sweet's Flor. Garden*, t. 389.

Descr.—Stem round, smooth, six feet or more high, branched, having an unpleasant smell. Leaves alternate, petiolate, ovate-lanceolate, acuminate, smooth, irregularly toothed, and giving forth a milky juice when plucked from the stem. Flowers solitary, axillary, longly pedunculate. Peduncles slender, covered with close adpressed hairs, having two small bracts near the centre. Calyx covered with short hairs, 10-ribbed, and divided into five subulate teeth, which are ciliate. Corolla tubular, pubescent, about an inch long, 2-lipped; lips reflexed, the upper lip divided into two portions, the lower lip into three portions; the tube is entire before the flower fully expands, and afterwards is divided along the upper part, through which the organs protrude. Its colour is an orange red, tipped with yellow. Filaments combined. Anthers combined of a brownish yellow colour, crowned at the apex with tufts of white hairs. Style bent at the upper part, and hairy immediately below the stigma. Stigma 2-lobed, papillose. Capsule 2-celled. Seeds numerous.

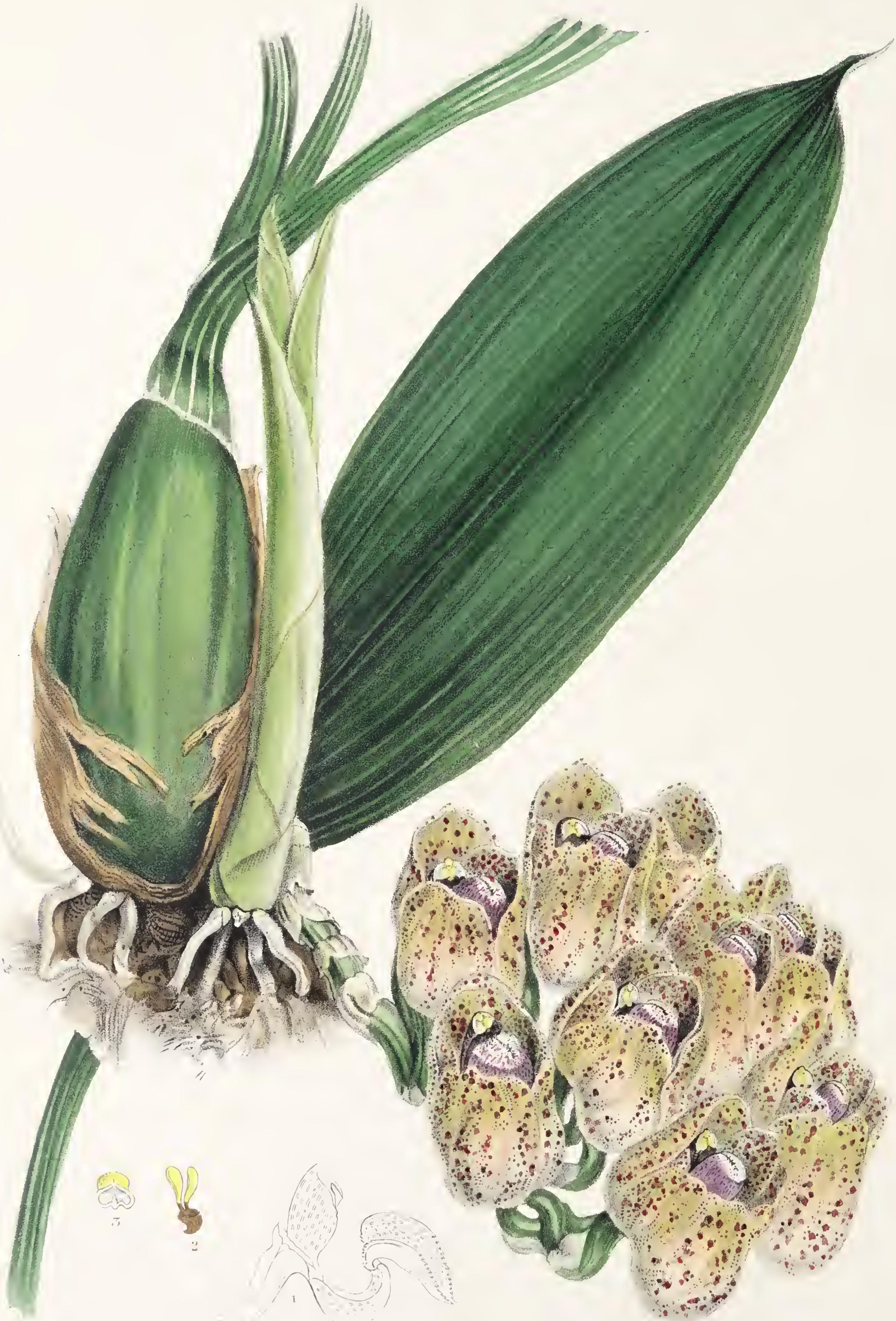
This genus was made as distinct from Lobelia by Pohl, in Sc. Plan. Brazil.; whether it will remain so we have much doubt. We see very little to cause the separation, upon comparing the structure of each.

It is a pretty, free-flowering plant, and should it prove hardy, will be a great acquisition to our gardens. It is a native of Georgia, in the United States of America.

The plant from which our drawing was taken is in the Garden of the Birmingham Botanical and Horticultural Society. It was planted out of doors in front of the stove this spring when about two feet high; it is now upwards of six feet. Soon after it was planted out, it flowered. It is still in fine bloom, and will probably continue to put forth new blossoms till cut off by the autumnal frosts. It has no appearance of perfecting seeds.

It must however, for the present, be considered a greenhouse plant till its hardiness is with more certainty ascertained. It is suffruticose, and well adapted for turning out into the border for flowering during the summer months, along with other free-flowering greenhouse plants. It prefers a mixture of loam and peat for potting. Cuttings root freely if planted in sand, and placed in heat; they root in a very short space of time early in the spring.

Fig. 1, a flower with the tubular corolla removed, to show the arrangement of the stamens; 2, the germ, style, and 2-lobed stigma; 3, the monadelphous stamens slit open.



Peristeria guttata.

W. Green del.

Day & Haghe Lithrs to the Queen.

PERISTERIA GUTTATA.

(*Spotted Dove-flower.*)

LINNEAN SYSTEM.
GYNANDRIA MONANDRIA.

NATURAL ORDER.
ORCHIDACEÆ § VANDEÆ.

GENERIC CHARACTER.

Peristeria (Hooker). *Perianthium* globosum. *Sepala* basi subconnata, concava, basi labello connata. *Petala* conformia, paulò minora. *Labellum* erectum, medio articulatum; dimidio superiore obovato truncato, medio pulvinato, inferiore bilobo columnâ continuo. *Columna* erecta, semiteres, basi magnâ dilatatâ. *Anthera* ecristata, bilocularis. *Pollinia* 2, posticè fissa, *glandulâ* sessili nudâ rostellum involvente. Herba subterrestris, pseudobulbosa. *Folia* plura, plicata. *Scapi* vaginati, radicales, multiflori. *Flores* speciosi. *Lindl. gen. et sp. Orch.* p. 160.

Perianth globose. *Sepals* somewhat connate at the base, concave, united at the base with the labellum. *Petals* similar in form, a little smaller. *Labellum* erect, articulated in the middle; the upper half obovate, truncate, cushioned in the middle, the lower half 2-lobed, continuous with the column. *Column* erect, semiterete, with a large dilated base. *Anther* crestless, 2-celled. *Pollen-masses* 2, divided posteriorly, with a sessile naked *gland* covering the rostellum. *Plant* rather terrestrial, with pseudobulbs. *Leaves* many, folded. *Scapes* sheathed, radical, many-flowered. *Flowers* handsome.

SPECIFIC CHARACTER.

P. guttata; *scapo* brevi, pendulo, multifloro; *racemo* denso, secundo; *labelli* dimidio inferiore disco crasso concavo, lobis lateralibus vix conspicuis, superiore ovato margine denticulato apice integro abruptè incurvo, intùs tuberculis minutissimis obsito; *columnâ* apterâ.

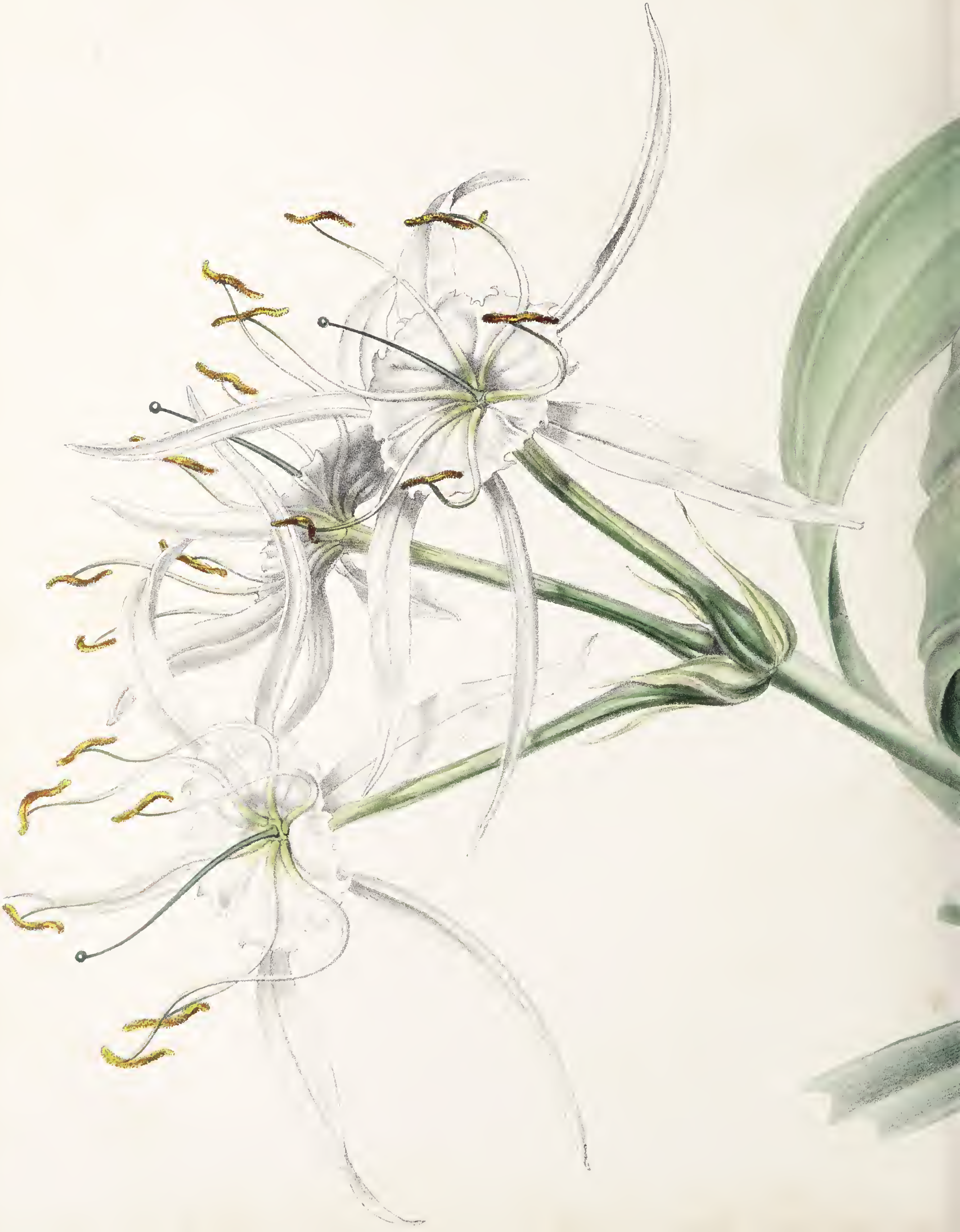
Scape short, pendulous, many-flowered; *raceme* dense, secund, the inferior half of the lip with a thick concave disc, lateral lobes scarcely perceptible, the superior or middle lobe with a finely-toothed margin, the apex abruptly incurved, the inner surface covered with very minute tubercles; *column* without wings.

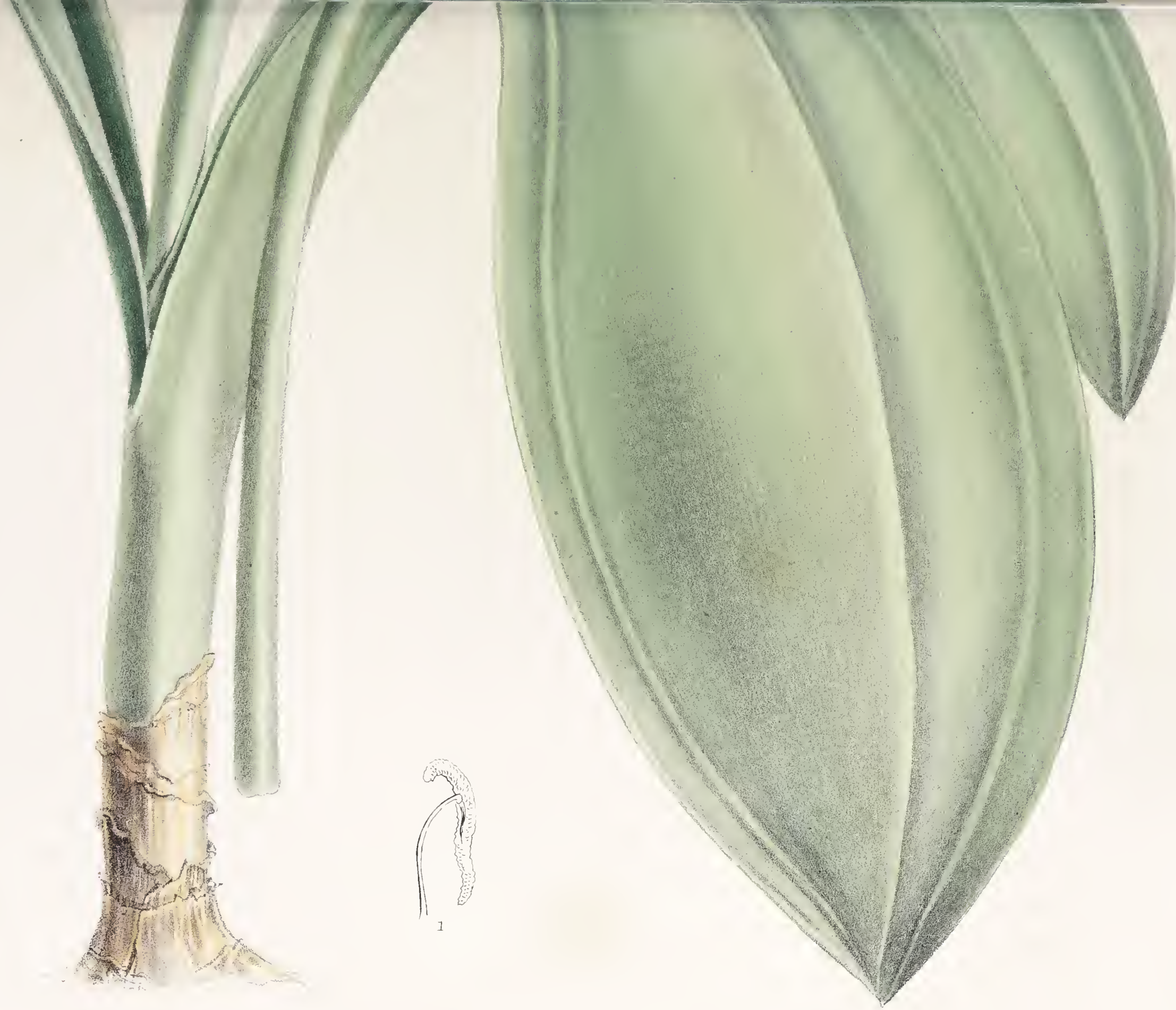
Descr.—*Pseudobulb* ovate-oblong, compressed, shining, from 3 to 4 inches long, slightly sheathed at the base with membranaceous scales, and bearing generally at the summit three broadly-lanceolate, acuminate, plaited leaves, dilated and sheathing at the base, about a foot in length. *Scape* short, rigid, clothed with short, ovate scales, and bearing on the upper side eight or nine closely-arranged flowers. *Flowers* erect, fleshy, ventricose, of a pale salmon colour, copiously marked within and without with spots of a reddish purple or morone colour, and emitting a powerful, peculiar, and agreeable odour. Upper *sepal* ovate-oblong, obtuse, lateral ones enlarged and tumid below, embracing and united with the base of the labellum. *Labellum* jointed in the middle, the upper portion, or lobe, erect, purplish at the apex, lying against and partly embracing the column; the inferior portion concave, with a fleshy border extending from the joint to the base of the column. *Column* thick, semiterete, spotted, much dilated at the base, and gradually terminating in the lip. *Pollen-masses* two, nearly sessile, compressed, pellucid, obovate-oblong, with a deep fissure in the margin; *gland* thick, somewhat triangular.

THIS beautiful species of *Peristeria* is somewhat allied to *P. pendula* of the Botanical Magazine; from which it differs in the colour, the shape, and the smaller size of the flowers, in the absence of wings from the column, and in the scarcely-developed lateral lobes of the labellum. It is much more nearly allied to *P. cerina* of the Botanical Register, with which it agrees in the general shape of the flowers, and the denticulated margin of the middle lobe of the labellum; but differs from it in the colour and copious markings of the flowers, in the entire (not emarginate) apex of the middle lobe, and in the absence of distinct lateral lobes. Still, however, the resemblance between them (except in colour) is so great, that we question whether our plant may not eventually be considered merely a spotted variety of *P. cerina*.

For an opportunity of figuring it we are indebted to George Barker, Esq., of Springfield, in whose stove it has recently flowered, and who obtained it, we understand, from Mr. Knight, of King's Road, by whom it was imported from Rio.

Fig. 1, labellum, column, and germ; 2, pollen-masses and gland; 3, anther-case.





Choretis Glauca

CHORETIS GLAUCA.

(*Glaucous-leaved Choretis.*)

LINNEAN SYSTEM.	NATURAL ORDER.
HEXANDRIA MONOGYNIA.	AMARYLLIDACEÆ.

GENERIC CHARACTER.

Choretis (Herbert). *Perianthium* tubo subrecto, cylindrico, laciniis et coronâ patulis; *filamenta* distantia, suberecta, conniventia; *antheræ* longæ, versatiles, callositate quâdam suprà medium affixæ pendulæ; *semina* oblongo-rotunda (glaucescentia?). *Herbert.*

Perianth with a tube somewhat straight, cylindrical, divisions and crown spreading; *filaments* distant, somewhat erect, converging; *anthers* long, versatile, attached by a distinct callosity above the middle, pendulous; *seeds* oblong, somewhat rounded.

SPECIFIC CHARACTER.

C. Glauca; *foliis* suberectis, glaucis, plùs minùs obtusis uncias 2-3 latis sesquipedalibus; *scapo* tereti 3-floro; *spathâ* valvis angustis erectis sejunctis; *germine* sessili loculis 1-2 spermis; *tubo* longo viridi; *limbo* albo, segmentis sepalinis viridi-costatis; *coronâ* albâ rotatâ margine laciniato; *filamentis* subulatis; *seminibus* glaucis glabris.

Leaves somewhat erect, glaucous, more or less obtuse, from 2 to 3 inches broad, a foot and a half long; *scape* terete, 3-flowered; *spathe* with narrow, erect, disjointed valves; *germ* sessile, with 1-2 seeded cells; *tube* long, green; *limb* white, the sepaline segments ribbed with green; *crown* white, rotate, with a laciniated margin; *filaments* awl-shaped; *seeds* glaucous, smooth.

Choretis Glauca.—*Herbert.* Amaryllidaceæ.

Descr.—*Bulb* globose, clothed with black integuments. *Leaves* remarkably glaucous, erect before flowering, afterwards reflexed. *Scape* from 15 to 18 inches long, bearing three flowers. *Anthers* recurved at both ends.

This beautiful and interesting plant is in the collection of George Barker, Esq., of Springfield, by whom it was imported. It is a native of Mexico, and was found in the province of Oaxaca. It was first described and made the type of a new genus (*Choretis*) by the Hon. and Rev. W. Herbert, whose intimate acquaintance with the Amaryllidaceæ has been long known to botanists. It approaches in habit to *Ismene*, but in the perianth to *Hymenocallis*, while it differs from them in certain points of structure, which are thus adverted to by

Mr. Herbert *:—"Before I had seen the flower of this plant, I entertained no doubt that it would prove to be an *Ismene*, and when the flower appeared, I had much difficulty in satisfying myself whether it should be considered generically distinct from *Hymenocallis* or not. I have not been able to learn that such a diversity of anther exists in any well-constituted genus; and particularly the separation of Habenaria from Orchis seems to be very analogous. I have since been fully satisfied of the diversity of this plant by the vegetation of the seeds, which, though sown in May (the plant having been forced to satisfy my impatience), have produced strong dormant bulbs underground at the bottom of the pot, in the manner of *Ismene*, which will not vegetate till next year. *Hymenocallis*, like most other bulbs, forms leaf and bulb at the same time."

Our plant differs in some respects from Mr. Herbert's description of *C. glauca*, which may possibly have arisen from its having been forced in the stove. The cells appeared to be two-seeded when young, but only one was perfected in each. The seeds, when mature, were three-angled, obtusely pointed at each extremity, the outer face convex, the two inner plane, compressed by the other seeds.

The *Amaryllidaceæ* are arranged by Mr. Herbert in three divisions, viz. 1, *Branching*: 2, *Caulescent*: 3, *Scapaceous*. The latter division is thus characterised:—Scape succulent, spathaceous, not articulate below the spathe. In this division is placed the sub-order *Amaryllideæ*, containing plants which more or less resemble *Amaryllis*, and which is subdivided into five sections, viz. 1, *Cyrtanthiformes*; 2, *Hippeastriformes*; 3, *Oporanthiformes*: 4, *Pancratiformes*: 5, *Amaryllidiformes*; each of which is characterised by certain peculiarities of structure. The fourth section (*Pancratiformes*) is distinguished by the cup or crown bearing the stamens, as in the well-known genus *Pancratium*. Some of the plants of this section are further distinguished by having their seeds *black* and *shelly*, while the others have them *green* and *fleshy*. The young botanist will therefore have no difficulty in referring *C. glauca* to the latter part of this section.

As regards the geographical distribution of the *Amaryllidaceæ*, it may be observed that they are comparatively rare in the northern parts of the Temperate Zone, where are found the genera *Narcissus* and Galanthus; but as we approach the south they increase in number as well as in beauty. On the shores of the Mediterranean we meet with Pancratium; in the East and West Indies are found Crinums and Pancratiums; but at the Cape of Good Hope, and especially in Tropical America, they show themselves in the utmost profusion, and in the highest degree of splendour; here Flora adorns the earth with some of her richest hues; here are found in all their beauty the various species of Crinum, Pancratium, Cyrtanthus, Brunsvigia, Nerine, Amaryllis, Hæmanthus, and Alströmeria.

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* Amaryllidaceæ; preceded by an attempt to arrange the Monocotyledonous orders, and followed by a Treatise on Cross-bred Vegetables, and Supplement. By the Hon. and Rev. William Herbert.

While, however, the *Amaryllidaceæ* are conspicuous for their beauty, they are also remarkable for the poisonous properties contained in many of them, properties by no means usual in *monocotyledonous* orders, which, on the contrary, are usually distinguished not only by the absence of all deleterious qualities, but by the abundance of nutritious aliment which they furnish for the use of man.

The different species of *Amaryllis* are considered to be more or less poisonous, but *Hemanthus toxicarius* is the plant in which a poisonous principle is found to be most powerfully developed. With the viscid juice of this plant (and probably some neighbouring species) the Hottentots are said to poison their arrows. Weapons wetted with the juice of the bulb are said to convey certain death by the slightest wound; though the flesh of animals thus slain is not affected, but is eaten by the natives. *Nerine sarniensis*, the Guernsey lily, which became naturalized in the islands of Jersey and Guernsey many years ago, by the wreck of a vessel from the Cape of Good Hope, is also reputed to be poisonous. Amaryllis *ornata* is considered to be astringent.

That many species of Narcissus contain an emetic property, is a fact which was well known to the ancients: this property is so predominant in the bulbs of some species, that they were called by the older herbalists *bulbi vomitarii*. Narcissus *poeticus*, *N. Jonquilla*, *N. odorus*, and *N. Tazetta*, are well-known examples; and our wild daffodil Narcissus *pseudo-narcissus*, is known to have similar properties; it is administered on the continent in doses of five or ten grains to produce nausea, and as an emetic in doses of thirty grains. The active principle of these plants is considered by De Candolle to be analogous to that of the squill. The extract is stated by Burnett to be the best form in which the active principle of the *Narcissi* can be exhibited medicinally. Two or three drachms of such a preparation, it is said, will destroy life in the course of a few hours; while in doses of a few grains it may be given with advantage. In doses of two or three grains, it is regarded by some persons as almost a specific in whooping cough, while by others it is considered an uncertain remedy:—Laennec, for instance, in speaking of its effects in this disease, says, "I have used this extract much, and have occasionally seen it effect surprisingly rapid cures, namely, in five or six days; but this result is rare, and as a general remedy I find it much less efficacious than Belladonna."

Some of the other genera are also used medicinally, as *oporanthus luteus*, which is laxative; *Alströmeria salsilla*, which is diaphoretic and diuretic; whilst some are cultivated as esculent vegetables. Alströmeria salsilla, the plant last mentioned, is cultivated in the West Indies and in America, especially in Peru, for the sake of its roots, which are eaten in those countries as the tubers of the common potato are in Europe. From the succulent roots of *Alströmeria pallida* a preparation is obtained in Chili resembling arrow-root. The wild Agave of Mexico yields, when tapped, a copious juice, which is fermented into a wine called Pulque, from which, according to Dr. Lindley, a spirit known under the name of Vino Mercal is obtained. It is remarked by Burnett that the Amaryllidaceæ lose much of their fragrance when the flowers become double, which is precisely the reverse of the multiplication of the petals in rosaceous plants.

Choretis Glauca requires to be potted in peat, loam, and sand, with plenty of drainers; to receive a liberal supply of water when growing, and to be kept cool and dry when dormant.

Mr. Herbert considers it to be a greenhouse plant, liking a very sandy soil.

Fig. 1. shows the attachment of the filament to the anther.

OBSERVATIONS ON THE NATURE OF SOILS.

As vegetables are in a great measure dependent upon the inorganic matter by which they are surrounded, for their nourishment, and even for their existence, it is evident that our success in cultivation must be very materially influenced by our knowledge of the physical condition and chemical composition of the external elements, the laws which regulate their changes, and the means we possess of modifying them. It may be safely asserted, that all the principles which have been ascertained as entering into the process of vegetation, are furnished, either separately or conjointly, by air, soil, and water. Plants, with very few exceptions, require soil for the reception of their roots, and as the medium through which they derive the greater part of their nourishment. It should be borne in mind, however, that they are living beings, endowed with certain powers by which they are enabled to take up as food such matters as are best adapted to the particular purposes of their economy; and that they flourish in proportion to the means they enjoy of satisfying their respective wants. It is necessary, therefore, to have correct ideas of the nature of soils, and of the circumstances upon which their difference depends. It has been ascertained long ago that *silica*, with *alumina*, *lime*, and *magnesia*, form the basis of all soils; and that of these four elements, in different proportions and in different combinations, all the numerous varieties of soil are composed. The quality of soil is, however, still further diversified by the admixture of animal and vegetable matters, a few salts, alkalies, and metallic oxides. The soils of this country may be very conveniently divided into three principal classes, viz. the *siliceous*, or sandy; the *aluminous*, or clayey; and the *calcareous*, or chalky; each being named after its predominant component, and each, of course, presenting numerous varieties.

SILICEOUS SOIL.

Of the primary earths above-named, *silica* is the one that enters most abundantly into the composition of the greater number of soils: it occurs in the shape of pebbles, gravel, and sand, of various degrees of fineness; and of such importance is its presence, that it may be admitted as a general rule, that no soil can be expected to be fertile, which does not contain at least one half of this earth as its basis. A fertile soil near Bristol was found to contain sixty parts in the hundred of silica. A good siliceous sandy soil from a hop-garden in Kent, contained upwards of fourteen parts in twenty of silica. A good turnip-soil from Holkham in Norfolk, afforded eight parts in nine of siliceous sand: and Sir Humphry Davy states, that he has seen a tolerable crop of turnips on a soil of which eleven parts out of twelve consisted of sand. Soils, however, which contain a still larger proportion of siliceous sand, are invariably characterised, more or less, by sterility. Such is the soil of Bagshot Heath, which is nearly pure silica, containing not more than one-fortieth part of other matters. Soils of this description are deficient in that degree of cohesion which is necessary to the support of healthy vegetation; they are liable to be dispersed by the wind, or washed away by heavy rain; they are, moreover, incapable of retaining (except for a short time) a proper degree of moisture; the rain which falls upon them being rapidly absorbed and permitted to sink to a depth far beyond the roots of the crop which they are intended to bear, while the surface becomes immediately dried by the sun.

ALUMINOUS SOIL.

The earth which, next to silica, is found most abundantly in soils, and which chiefly contributes to their tenacity, is *alumina*. It has a great affinity for water, of which it imbibes and retains a large quantity. Soils, therefore, which contain too large a proportion of this earth soon become saturated in wet weather. Such soils are, consequently, too cold and adhesive in winter, on which account the roots of plants having their temperature diminished below the natural standard, are apt to perish; in dry summers, on the contrary, they shrink in an equal degree, becoming stiff and unmanageable, and presenting on their surface large clefts of considerable depth. Such soils, from their hardness in dry weather, are with difficulty penetrated by the delicate fibrous roots of many plants. An aluminous, or clayey soil, prevails in most of the coal districts; though sometimes moderately fertile, it is for the most part poor, and requires a great deal of nice management by draining, liming, &c., to make it tolerably productive. The *Plastic*, the *Weald*, the *Kimmeridge*, and the *Oxford clays*, are well-known examples. The Kimmeridge clay is favourable to the growth of the oak.

CALCAREOUS SOIL.

This soil is distinguished by the presence of *lime*, combined generally with carbonic acid, and is found in the state of *chalk*, *limestone*, *shells*, or *marl*; the latter consisting of carbonate of lime mixed in various proportions with clayey sand; it occurs also occasionally in combination with sulphuric acid, in which state it is known by the name of *gypsum*, a substance which, when deprived of its water of crystallization by exposure to a strong heat, forms the well-known article called *plaster of Paris*. It has been ascertained that the most fertile soils usually contain a considerable proportion of lime; while, on the other hand, a soil which contains *too much* calcareous matter is always sterile. Lime has a great affinity for water, of which it is also very tenacious; its power of absorption, however, depends very materially upon the degree of fineness of the calcareous matter as found in soils. According to the experiments of Professor Schübler, 100 parts of calcareous sand retained 29 parts of water, while the same quantity in a state of fine powder retained 85 per cent.

Some of the chalk districts, particularly where they come in contact with other formations, are moderately fertile: their prevailing character, however, is sterility, more especially when combined with any considerable proportion of magnesia, as in the province of Champagne in France. The same remarks are equally applicable to the limestone districts; they vary in fertility according to the nature of the subsoil and other circumstances; many of the valleys being noted for their productiveness; while the more elevated parts (as well as in the chalk districts) are for the most part remarkable for their sterility. A chalky soil, however, appears to be particularly favourable to the growth of the beech; the Chiltern Hills are said to have been formerly covered with it, and thus affording shelter to banditti; "whence the office of Steward of the Chiltern Hundreds, the acceptance of which, though now only nominal, enables a member to vacate his seat in parliament."

Such are the three principal kinds of soil, and which are named, as already observed, from the primary earth which chiefly abounds in them. It has been remarked by Sir Humphry Davy that the term *sandy* (siliceous) soil should never be applied to any soil that does not contain, at least, seven eighths of sand; and that sandy soils which effervesce with acids should be named *calcareous* sandy soils (as containing chalk or lime), to distinguish them from those that are more decidedly siliceous. So, in like manner, "the term *clayey* soil should not be applied to any land which contains less than one sixth of impalpable earthy matter, not considerably effervescing with acids."

The botanist judges of soils from the plants which they spontaneously produce, some plants being found to grow naturally on one soil, but may be sought for in vain on another; thus the common Foxglove (Digitalis purpurea), which delights in a sandy or gravelly soil, is never seen in those parts of Gloucestershire which are situated upon the Cotswold Hills, a most extensive range, and chiefly composed of a sandy *limestone*. On the other hand, the wild parsnep (*Pastinaca sativa*) may generally be observed by road-sides in a chalky or limestone district, but soon disappears as we enter upon a soil with a sandy or gravelly bottom. From such facts, an attentive observer is enabled to form a tolerably correct opinion of the general character of soils; but this is by no means sufficient as a guide in cultivation. In order to become acquainted with the real nature of soils, we must have recourse to chemistry, without which it is scarcely possible to arrive at any degree of accuracy. The late Sir Humphry Davy threw great light upon this subject by the publication of his admirable lectures on Agricultural Chemistry; at the same time he very justly observes, "that the results of analyses considered as affording indications of fertility, must necessarily differ according to the variations of *climate*, *situation*, and *other circumstances*. Thus, the power of soils to absorb moisture ought to be greater in warm and dry countries than in cold and moist ones, and when the quantity of fine argillaceous (clayey) earth they contain is larger. Soils likewise which are situated on declivities, ought to be more absorbent than those in the same climate situated on plains and valleys. The productiveness of soils must likewise be influenced by the nature of the subsoil, or the earthy and stony strata on which they rest. Thus, a sandy soil may sometimes owe its fertility to the power of the subsoil to retain water; and an absorbent clayey soil may occasionally be prevented from being barren, in a moist climate, by the influence of a substratum of sand or gravel." If therefore we have recourse to chemical analysis, with a view to ascertain the comparative value of soils, due allowance must of course be made for the circumstances above named.

(*To be continued.*)

ON THE MANAGEMENT OF THE HARDY SPECIES OF ERICA AND MENZIESIA.

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

The hardy species and varieties of the genus Erica and Menziesia are highly ornamental in the flower-border, as well as upon rock work. There are but few gardens in which they are cultivated to any extent, in consequence of the supposed difficulty of growing them. Any kind of light peat grows them well; and also very light sandy loam, or loam and peat mixed. The only requisite attention is, either to keep up a succession of young plants to replace the old ones every two years; or where large spreading plants are wanted, to keep them rooting on all their shoots, from the stem to the points of the young shoots. The experience of many years has proved, that however healthy the plants may be when they get large, and are not occasionally made to take root as they spread along, they are liable to be destroyed or much injured, and get unsightly, with the exception of E. Australis and Mediterranea, which being erect-growing sorts, attain a considerable height, without being liable to die off. No season has, however, proved more fully than the past winter the necessity of *renewing* the plants frequently, all large specimens having been much injured and some even killed; whilst the same sorts, if only three or four inches high, did not sustain the least injury. To keep up a succession of young plants, the tender points of the shoots should be laid down in spring or autumn; they will be well rooted in six months. The best season for taking off and transplanting the layers, is about the middle of October, when the ground is moist, that they may take root before the frost sets in; and in the spring in March, which will thus allow time for the plants to get established before the dry weather sets in. In transplanting, they should be put two or three inches deeper into the soil than they stood before transplanting. When they are planted in a mass, and the raising the ground is no object, they may be kept healthy for several years, by every autumn laying an additional covering of two or three inches of soil amongst them, in which they will strike fresh roots.

ON ROSES IN POTS.

BY AN AMATEUR.

When the plants do not thrive, when the leaves become yellow, or when they are infested with the green fly, examine the bottoms of the pots, and probably the roots will be found protruding through them ; the plant in this state is left without proper support, and is deprived of the nourishment necessary to keep it in vigour. Such plants should instantly be repotted in a pot one size larger. Since I adopted this plan I have had no difficulty in keeping my roses in a healthy condition. If I perceive them troubled with the honey-dew, I immediately well wash them ; and during the hot weather I give them plenty of water. I prefer rather a light soil, though I know some do not ; but if the soil used be good, the pots well drained (and not too small), and the *repotting* attended to, I am in no fear of having unsightly plants. I have invariably observed, that if the roots grow through the bottom of the pot, the plant directly begins to show some unhealthy leaves. Other plants, as well as roses, are affected in a similar manner from the same cause—*a want of due support to the roots.* To those readers of the Floral Cabinet who, like the writer, cultivate flowers as an amusement for a little leisure, this information may be useful, as it is the result of practical experience, and is now the saving of much annoyance to An Amateur.

OF THE SCENT OR AROMA OF FLOWERS.

The fragrance of flowers is one of their most attractive and delightful properties. The scent as well as the colour of the blossoms of plants are among the chief charms of nature, whether wild or cultivated. That flowers are endowed with the power of effusing odours, is as certain as that it is a necessary part of their economy. If destitute of scent and of high colours, insects would not be so readily attracted to scatter and disperse the pollen so necessary to the fruitfulness of all flowering plants.

But what we are more particularly about to call the attention of our reader to on the present occasion, is the curious circumstance of almost all the most colourless or most *dingy-tinted* blossoms being most odorous *in the night.* This would appear as if nature intended to give increased value to one excellence for the want of it in another. Naturalists have always observed that among the feathered tribes of animals, those having the finest plumage are most defective in song. Somewhat of the same law seems to obtain among the plants alluded to. Some species of the genus *Cheiranthus* have very vividly-coloured flowers, and which are also highly-scented during the day ; but there are other species of no beauty, nor otherwise inviting by daylight, which are exquisitely odoriferous during the night. The petals of these last are invariably of a dull brown colour, and as flowers are by no means showy.

There are several other *nyctanthii*, night-plants, which are fragrant ; but in no tribe is this circumstance more conspicuous than in the natural order *Orchidaceæ*. All the species have curiously formed flowers; some of them singularly grotesque; and though many of them are both elegant and highly coloured, a majority of them are sombre-tinted, and lavishly spotted and chequered with dull purple, muddy yellow, and lurid brown. These, however, notwithstanding their lugubrious appearance, are finely scented, especially in the absence of strong light, a single plant being sufficient to scent a whole building.

Among many others of this interesting genus, the *Cymbidium Sinensis* is remarkable for its symmetrical spike of dull yellow flowers, and powerful fragrance in the dark; and there are several other species equally odorous and equally destitute of vivid colours.

But why should dull-coloured flowers evolve a higher or more powerful aroma during night than by daylight? Is it because their excretion of nectar or honey is more copious in the night season than it is by day, in consequence of the dull petals imbibing more heat in the day than if they were of a lighter hue? or is it, that the effluvia are less volatile in the denser air of night than in the rarer air of day, and therefore less sensibly perceived by day visiters? These are questions which we dare not venture to answer; but we recommend the circumstance as a curious incident among the phenomena of vegetation.

We know not whether the scent evolved from flowers is in any way connected with colour. It is the qualities of their juices which acquire colour from the action of the sun's light. This coloured juice is termed the chromule; and according as this is more or less in quantity, the colours are deeper or paler. One class of tints are said to be oxidated, and another de-oxidated. All modifications of the coloured matter occasioned by its oxidation cause the great variety of colour exhibited by plants.

It is said that the leaves, and no doubt the flowers also, exhale oxygen gas in the day, and absorb it during the night. Is it probable that the inhalation of this gas *displaces* that odorous vapour so amply diffused by the plants alluded to in the night? Whatever may be the cause, there can be no doubt of the fact, that brown-coloured flowers are most odorous during night; and as it is a subject which has not yet been satisfactorily explained, deserves the attention of every studious botanist.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

RHODORACEÆ.

RHODODENDRON ALBIFLORUM. Hooker. White-flowered Rhododendron. *Bot. Mag.* t. 3670. This is not a showy, but a very distinct species, bearing delicate cream-coloured flowers. It was discovered by Mr. Drummond, in the Alpine woods of the Rocky Mountains; and seeds which were sent by the officers of that expedition to Dr. Graham, produced plants which blossomed in July 1837. *Bot. Mag.*

LOBELIACEÆ. Lindl.

Lobelia Bridgesii. Hooker. Mr. Bridges's Lobelia. *Bot. Mag.* t. 3671. This is a handsome species, bearing delicate pink flowers. It was found by Mr. Bridges near El Castello de Amorgos Valdivia, in the south of Chili.

The country is indebted for this plant to Mr. Aiton, of the Royal Gardens at Kew, who has raised it from seeds. It produced its flowers in the greenhouse in 1837. *Bot. Mag.*

EUPHORBIACEÆ. Lindl.

Euphorbia rigida. Bieb. Double-glanded Euphorbia. *Bot. Reg.* N. S. t. 43. A handsome species, brought from Italy by the Hon. Mr. Strangways, who has distributed it to many gardens. It is a native of the dry declivities in the neighbourhood of the Black Sea, flowering in May or June; also on the low mountains and calcareous hills in many places in Sicily; and in similar situations in various parts of Calabria and Abruzzi. It is perfectly hardy, and is well calculated for rock-work. *Bot. Reg.*

MONOCOTYLEDONES.

TRIBE EPIDENDREÆ.

Cattleya Mossiæ. Hooker. Mrs. Moss's Cattleya. *Bot. Mag.* t. 3669. A most magnificent species, very nearly allied to C. labiata, but is said to differ from that species by its elongated branching stem, and deeply-sulcated pseudo-bulbs, by its unguiculate sepals and petals, and by the markings, and size of the lamina of the labellum.

The size of the flowers is:—From the top of the upper sepal to the tip of the labellum seven inches and a half; the diameter from tip to tip of the petals eight inches and a half. Each petal is four inches long, and two and a half broad. The flowers are twenty-four inches in circumference, and emit a most powerful fragrance, resembling Gymnadenia conopsea, but much stronger.

It was introduced through the medium of G. Green, Esq., of Liverpool, in September 1836, from La Guayra. It flowered in the stove of Mrs. Moss of Otterspool, near Liverpool, after whom it has been named. *Bot. Mag.*

Prosthechea glauca. (Nov. Gen.) Perianthium patens. Sepala libera æqualia. Petala libera æqualia sepalis triplò minora. Labellum lineare columnâ continuum parallelumque carnosum apice trilobum. Columna nana curvata basi cavata. Gynizus semirotundus. Anthera subdorsalis 4 locularis. Pollinia 4. Caudiculæ 4. Clinandrium integerrimum basi apiculatum infrà appendiculatum. Pseudobulbus ovato-orbicularis, compressus. Folia lanceolata. Scapus terminalis gracilis ramosis. Flores racemosi. Herba Mexicana.

Pseudo-bulbs 1-leaved, roundish, oval, compressed. Leaves lanceolate, longly sheathed at the base, of a parchment-like texture. Scape slender, about a foot long, drooping, branched. Flowers spreading after the manner of an Epidendrum, pedunculate, disposed in racemes, pointing one way. Sepals ovate, acute, of a purplish colour, tipped with greenish yellow. Petals about one-third the size of the sepals, lanceolate, acute, and similar to the sepals in colour. Labellum linear-lanceolate, parallel, and pressed to the column, fleshy, and more especially at the apex, which is divided into three unequal lobes; the central lobe is broad, the side lobes are longer, narrower, and approaching, and at the back is a fleshy angular appendage. Bracts lanceolate-acute. Column curved, angular, hollow at the base. Gynizus crescent-shaped, the sides of which are streaked with purple. Pollen-masses 4, situate almost at the back of the column, somewhat pear-shaped. Caudiculæ 4. Anther purplish, 4-celled. Clinandrium roundish, entire, apiculate at the base, and just below is a roundish fleshy appendage streaked with purple.

The whole plant is covered with a glaucous hue.

This is a very delicate but not a showy plant, imported from Mexico by G. Barker, Esq., of Springfield, near Birmingham. It is nearly related to the genus Epidendrum, but differs in the structure of the labellum and column. The generic name is formed from προσθήκη, appendix, in reference to the appendage on the back of the column.

TRIBE VANDEÆ. Lindl.

Maxillaria Rollisonii. Lindl. Messrs. Rollisons' Maxillaria. *Bot. Reg.* N. S. t. 40. A pretty species, having much the appearance of M. Stapelioides, but the flowers are much smaller, and the labellum is not so dark-coloured. It is a native of Brazil, imported by Messrs. Rollison, and flowered in their establishment in the year 1837. *Bot. Reg.*

Maxillaria stenopetala. Pseudo-bulbis angulatis rugosis. Foliis ovato-lanceolatis costatis. Scapo radicali multifloro. Floribus longe pedicellatis apice reflexis. Sepalis lanceolatis acuminatis. Petalis striatis lineari lanceolatis acuminatis. Labello unguiculato, trilobo, in medio striato, lobis lateralibus acutis lobo intermedio lanceolato acuminato. Gynizo subrotundo margine superiore crasso.

This species is in the possession of Messrs. Pope and Sons, of the Handsworth Nursery. The colour of the flowers is orange, the petals and labellum being striped with a darker colour. It is a native of the Organ Mountains, and was found growing on the large branches of trees. It was introduced in October 1837.

CALENDAR OF GARDENING OPERATIONS FOR SEPTEMBER.

Continue to put in cuttings of stove and greenhouse plants where increase is required. Put in cuttings of the more rare and scarce herbaceous plants. This is also a good time for dividing all herbaceous plants, which will get well established before winter, and flower strong the ensuing spring. Dividing herbaceous plants is indispensable when they get large and matted, in which state they are liable to perish in winter.

This is also a good time for transplanting evergreens, such as Hollies, Laurels, Portugal Laurels, Laurustinus, &c.

Layers of Carnations, Piccotees, and Cloves, must be taken off and potted into small pots, two in each pot, in a mixture of loam and rotten dung, mixed with some sharp river sand.

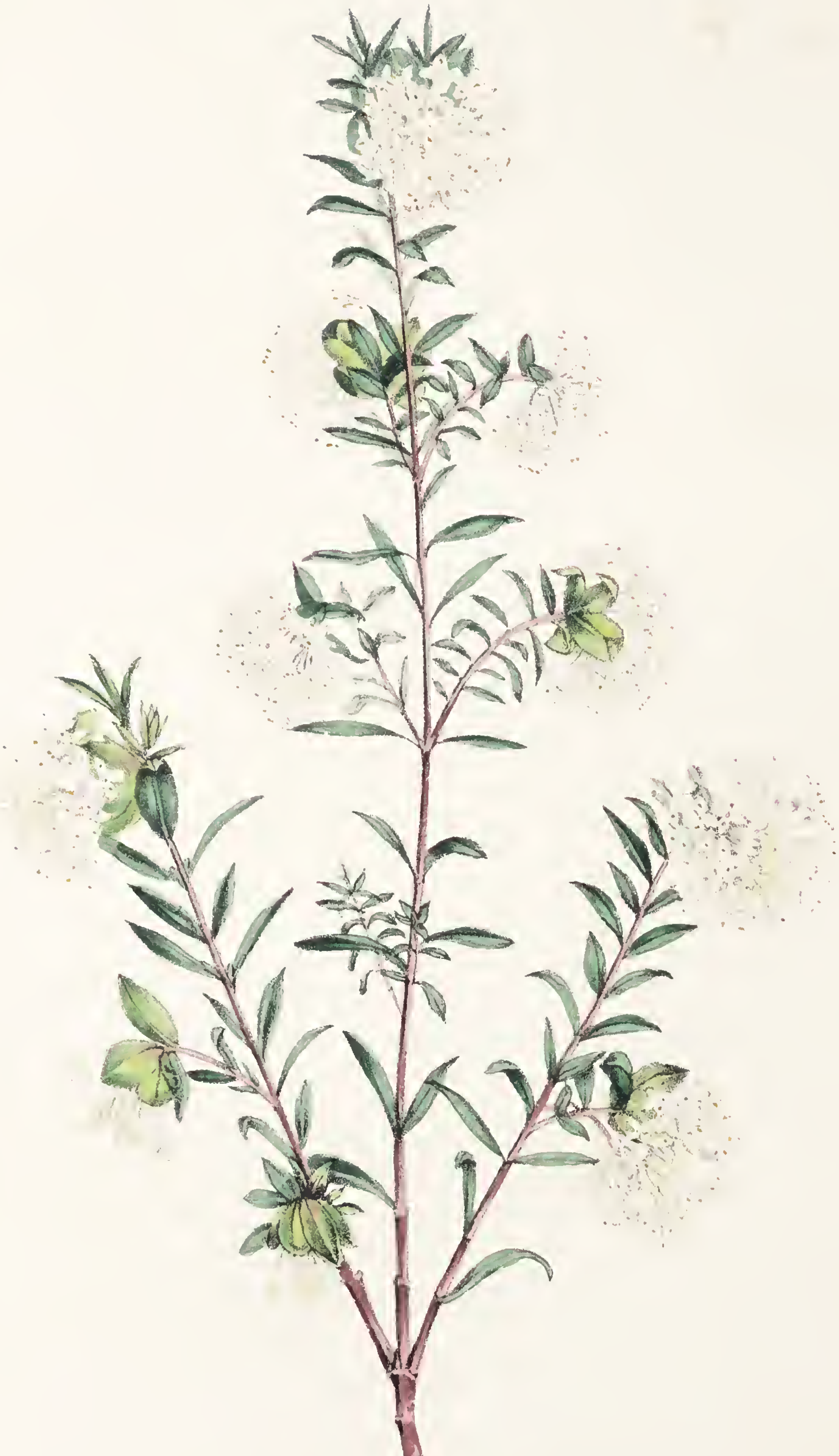
Continue to reset the greenhouse plants out of doors, to prevent their rooting into the ground. Towards the middle or end of the month, according as the weather may be, the greenhouse plants will require to be brought into the houses for winter. They ought to be brought in when perfectly dry, and the house should have plenty of air night and day for some weeks afterwards. Previous to bringing in the plants the houses should be thoroughly cleaned, and the walls whitewashed if necessary.

Dahlias, and other late-flowering plants, will require considerable care in taking and tying during this month.

Some Californian Annuals may still be sown in the open ground, to succeed those sown last month.

Pot Strawberry runners for forcing, selecting the strongest for that purpose.

Cuttings of Epacris, and some of the more difficult species of Erica, may now be put into sand, under bell-glasses; they will be rooted by spring.



R. Mills

Pimelea Cernua

PIMELEA CERNUA.

(*Drooping Pimelea.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DIANDRIA MONOGYNIA.	THYMELACEÆ.—(*Lindl.*)

GENERIC CHARACTER.

Pimelea (Banks et Solander). *Perianthium* infundibuliforme, limbo 4-fido, fauce esquamata. *Stamina* duo, fauci inserta, laciniis exterioribus opposita. *Stylus* lateralis. *Stigma* capitatum. *Nux* corticata, rarò baccata.

Frutices. *Folia* opposita, rarò alterna. *Flores* capitati terminales, foliis involucrantibus sæpè dissimilibus, interdum connatis, variùs spicati vel axillares, quandoque dioici. *Perianthii tubus* in plerisque medio articulatus articulo inferiore persistente.—*Br. Prod. Flor. Nov. Holl.* p. 359.

Perianth funnel-shaped, limb with four divisions, throat without scales. *Stamens* two, inserted in the throat and opposite to the exterior divisions of the perianth. *Style* situate on the one side. *Stigma* capitate. *Nut* coated with a hard covering, rarely a berry.

Shrubs. *Leaves* opposite, rarely alternate. *Flowers* in heads, terminal, having the involucral leaves frequently dissimilar, sometimes joined, rarely spiked or axillary, and sometimes diœcious. *Tube of the Perianth* in most joined in the middle, having the lower portion persistent.

SPECIFIC CHARACTER.

P. Cernua (Brown); *involucris* tetraphyllis; *foliolis* latè ovatis utrinque glabris capitulum subæquantibus; *perianthio* infrà articulationem hirsuto: *foliis* spathulato-linearibus.

Involucres four-leafed; *leaflets* broadly ovate, smooth on each side, and nearly equal in length to the head; *perianth* hairy below the articulation; *leaves* linear, spathulate.

Pimelea Cernua.—*Brown*, *Prodromus Flor. Novæ Hollandiæ*, p. 359.

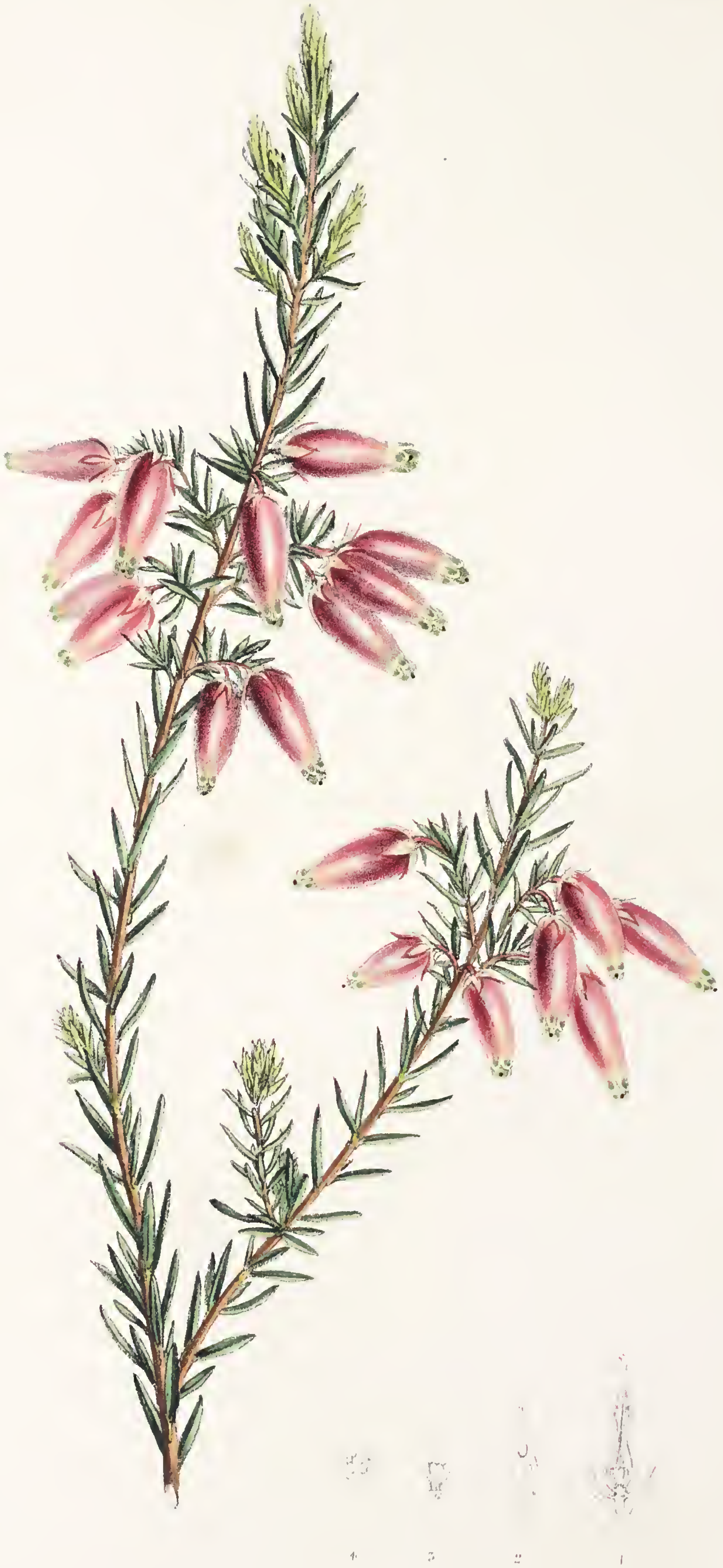
Descr.—*Stem* branched, from two to three feet high, of a dark reddish brown colour, naked towards the base. *Leaves* smooth, linear, rather approaching, spathulate, increasing in size towards the top. *Involucral leaves* smooth, broadly ovate, recurved at the apex. *Flowers* in a dense head of a pale yellow colour. *Perianth* half an inch long, tubular, slender, smoothish, articulated at the base with the ovarium, limb divided into four equal segments slightly reflexed. *Stamens* two, situate in the throat of the perianth. *Anthers* two, roundish, dehiscing longitudinally. *Style* filiform, about the length of the stamens. *Stigma* minute. *Ovarium* densely hairy.

This is a very delicate species, and is in the collection of the Birmingham Botanical and Horticultural Society. It was raised about three years ago from seeds which were presented to that establishment by Jos. Hodgson, Esq. of

Birmingham. Like most of the other species of Pimelea, the cuttings take a long time to strike root, and ought to be put in sand and covered with a hand-glass in autumn. It requires the protection of the greenhouse, and should be potted in peat, loam, and sand, using plenty of drainers at the bottom of the pot.

This genus is exclusively Australian, and is found distributed in most parts of that country, but principally on the eastern coast.

For the derivation of the generic name see vol. i., p. 18. The specific name, "cernua," has reference to the nodding or drooping heads of flowers.



Erica Wellmoriae

ERICA WILLMOREI.

(*Mr. Willmore's Erica.*)

LINNEAN SYSTEM.	NATURAL ORDER.
OCTANDRIA MONOGYNIA.	ERICACEÆ. (*Lind.*)

GENERIC CHARACTER.

Erica. (LINN.) *Calyx* 4-sepalus, inferus. *Corolla* 4-fida. *Stamina* receptaculo inserta. *Antheræ* bifidæ. *Capsula* 3-locularis.

Calyx 4-sepalled, inferior. *Corolla* 4-cleft. *Stamens* inserted upon the receptacle. *Anthers* bifid. *Capsule* 4-celled.

SPECIFIC CHARACTER.

E. Willmorei; (hyb. var.) *foliis* ternis linearibus canaliculatis; *bracteis* calyci proximis; *sepalis* ovato-lanceolatis acutis; *floribus* axillaribus; *corollis* tubuloso-ventricosis semi-pellucidis; *antheris* inclusis; *stigmate* sub-exserto.

Leaves in threes, linear, channelled; *bracteas* close to the calyx; *sepals* ovate-lanceolate, acute; *flowers* axillary; *corollas* tubular-ventricose, semi-pellucid; *anthers* included; *stigma* somewhat exserted.

DESCR.—*Flowers* rather transparent, in shape somewhat intermediate between tubular and ventricose, of a bright but rather pale red, the *mouth* 4-parted, divisions rounded, of a beautiful green with a delicate white margin.

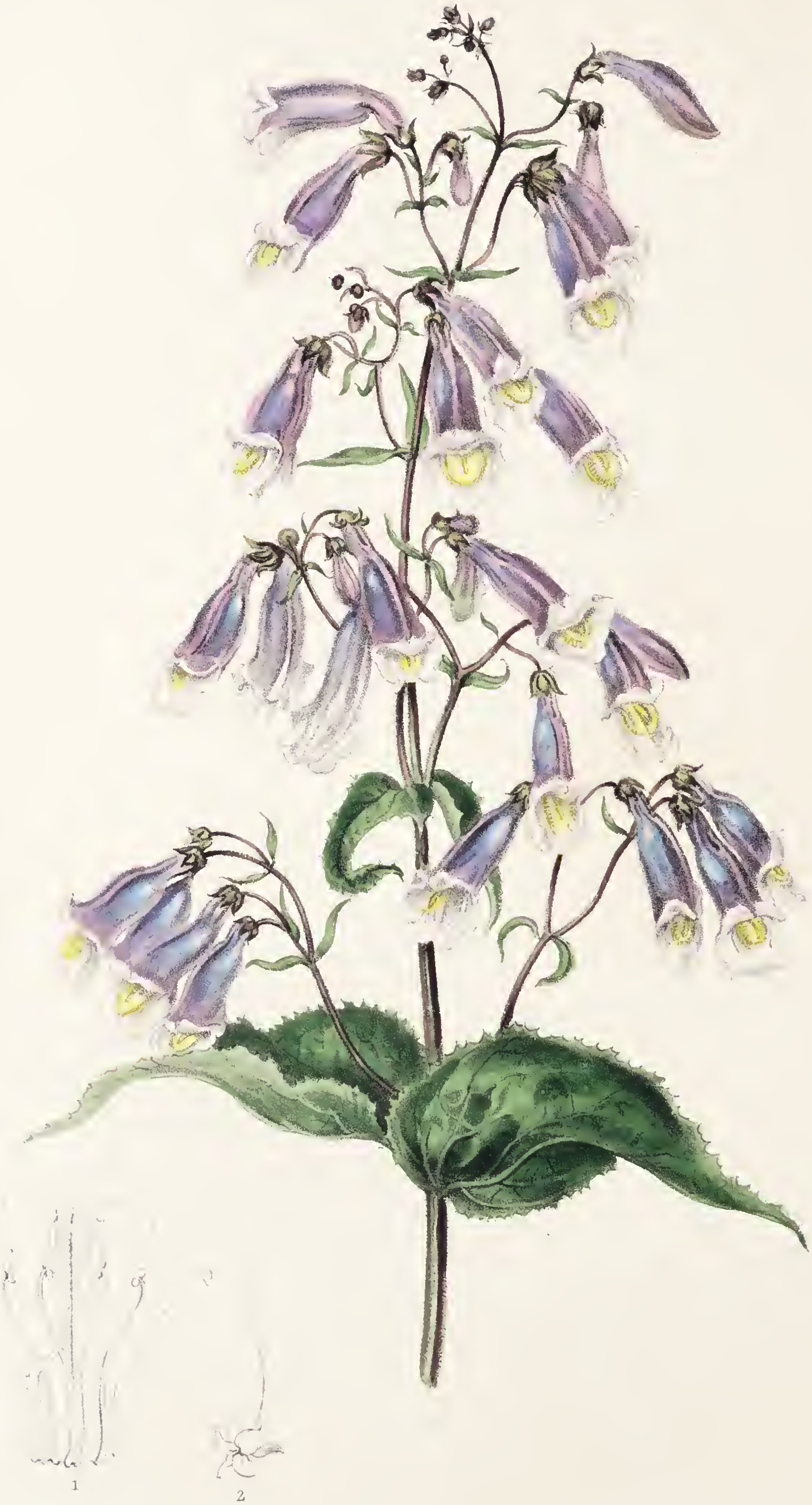
THIS hybrid variety of *Erica* is in the collection of John Willmore, Esq. of Oldford, and was raised by that gentleman's gardener, Mr. John Williams, whose skill and perseverance have been the means of introducing an immense number of beautiful hybrids, particularly *Calceolarias*, many of which are infinitely more beautiful than any of the original species. The present specimen is interesting as affording a proof of the possibility of obtaining hybrid varieties between *Heaths* with *tubular* flowers, and those with *globose* flowers; or, to use the language of gardeners, between the *pill* and the *tube*, a fact which we believe has been very generally denied.

The practice of hybridizing is so interesting and curious in itself, and is attracting so much attention in the present day, that we are induced to offer a few remarks upon the subject, extracted from the appendix to the Hon. and Rev. W. Herbert's admirable work on the *Amaryllidaceæ*:—

"The first experiments," says Mr. Herbert, "with a view to ascertain the possibility of producing hybrid vegetables, appear to have been made in Germany, by Kolreuter, who published reports of his proceedings in the acts of the Petersburgh Academy, between fifty and sixty years ago. *Licium*, *Digitalis*, *Nicotiana*, *Datura*, and *Lobelia*, were the chief plants with which he worked successfully, and as I have found nothing in his reports, to the best of my recollection, opposed to my own general observations, it is unnecessary to state more concerning his mules than the fact, that he was the father of such experiments. They do not seem to have been at all followed up by others, or to have attracted the attention of cultivators or botanists as they ought to have done; and nothing else material on the subject has fallen under my notice of earlier date than Mr. Knight's report of his crosses of fruit trees, and my own of ornamental flowers, in the Transactions of the Horticultural Society of London. Those papers attracted the public notice, and appear to have excited many persons both in this country and abroad to similar experiments." Mr. Herbert, after a variety of curious and frequently repeated experiments, has come to the conclusion, "that the genera of plants are the real natural divisions; that no plants which interbreed can belong to separate genera; that any arrangements which shall have parted such plants, must be revised; that any discrimination between species and permanent varieties of plants is artificial, capricious, and insignificant; that the question which is perpetually agitated, whether such a wild plant is a new species or a variety of a known species, is waste of intellect on a point which is capable of no precise definition; and that the only thing to be decided by the botanist in such cases is, whether the plant is other than an accidental seedling, and whether there are features of sufficient dissimilarity to warrant a belief that they will be reproduced, and to make the plant deserve, on that account, to be distinguished among its fellows. The effect, therefore, of the system of crossing, as pursued by the cultivator, instead of confusing the labours of the botanist, will be to force him to study the truth, and take care that his arrangements and subdivisions are conformable to the secret laws of nature; and will only confound him when his views shall appear to have been superficial and inaccurate; while on the other hand, it will furnish him an irrefragable confirmation when they are based upon reality. To the cultivators of ornamental plants, the facility of raising hybrid varieties affords an endless source of interest and amusement. He sees in the several species of each genus that he possesses the materials with which he must work, and he considers in what manner he can blend them to the best advantage, looking to the several gifts in which each excels, whether of hardiness to endure our seasons, of brilliancy in its colours, of delicacy in its markings, of fragrance, or stature, or profusion of blossom; and he may anticipate with tolerable accuracy the probable aspect of the intermediate plant which he is permitted to create; for that term may be figuratively applied to the introduction into the world of a natural form which has probably never before existed in it. In constitution the mixed offspring appears to partake of the habits of both parents; that is to say, it will be less hardy than the one of its parents which bears the greatest exposure, and not so delicate as the other; but if one of the parents be quite hardy, and the other not quite able to support our winters, the probability is that the offspring will support them, though it may suffer from a very unusual depression of the thermometer, or excess of moisture, which would not destroy its hardier parent For the purpose of obtaining a large or a brilliant corolla, it will probably be found, in the long run, best to use the pollen of the species which excels in those points, because the corolla, in truth, belongs to the male portion of the flower, the anthers being usually either borne upon it, or in some manner connected with it by a membrane."

Fig. 1, vertical section of a corolla, showing the included stamens and exserted stigma; 2, stamen with the awned appendages; 3, germ, style, and stigma; 4, transverse section of seed-vessel.

Nº 74.



Penstemon Mackayanus.

Miss Green del.

Day & Haghe Lithrs to the Queen

PENTSTEMON MACKAYANUS.

(*Mr. Mackay's Pentstemon.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DIDYNAMIA ANGIOSPERMIA.	SCROPHULARIACEÆ § DIGITALEÆ.—(*Benth.*)

GENERIC CHARACTER.

Pentstemon (L'Her.) *Calyx* 5-sepalus aut 5-partitus, bracteâ solitariâ distante. *Corolla* ventricosa bilabiata. *Stamina* didynama, rudimento quinti filiformi sæpiùs barbato. *Antheræ* sejunctæ, sæpiùs glabræ. *Capsula* ovata, bilocularis, bivalvis, polysperma. *Semina* angulata. Herbæ vel suffrutices, Americanæ vel Orientali-Asiaticæ. *Folia* lævia acuminata, sæpiùs serrata. *Flores* paniculato-racemosi, purpurei, rosei, albidive. (*Lindl.*)

Calyx 5-sepalled or 5-parted, with a solitary, distant bractea. *Corolla* ventricose, bilabiate. *Stamens* didynamous, with the rudiment of a fifth, which is filiform and usually bearded. *Anthers* separate, most frequently smooth. *Capsule* ovate, 2-celled, 2-valved, many-seeded. *Seeds* angular. Herbs or under-shrubs natives of America or Eastern Asia. *Leaves* smooth, acuminated, most frequently serrated. *Flowers* paniculately racemose, purple, rose-coloured, or white.

SPECIFIC CHARACTER.

P. Mackayanus; glanduloso-pubescens; *caule* gracili ascendente; *foliis caulinis* cordato-acuminatis undulatis subrepando-denticulatis glabris amplexicaulibus; *radicalibus* latè lanceolatis petiolatis; *pedunculis* axillaribus oppositis multifloris in paniculam diffusam terminalem dispositis; *calyce* brevi segmentis ovatis acutis; *corollâ* compressâ labio superiore brevi inferiore subelongato intùs villoso; *filamento sterili* subexserto ab apice infrà medium barbato; *germine* glabro.

Glandular-pubescent; *stem* slender, ascending; *stem-leaves* heart-shaped, acuminate, undulate, slightly-toothed, smooth, stem-embracing; *radical leaves* broadly lanceolate, petiolate; *peduncles* axillary, opposite, many-flowered, disposed in a loose terminal panicle; *calyx* short, with ovate acute segments; *corolla* compressed, the upper lip short, the lower one somewhat elongated, hairy within; *sterile filament* somewhat exserted, and bearded from the apex below the middle; *germen* smooth.

Descr.—*Stem* terete, from twelve to fifteen inches high, clothed with short glandular hairs. *Leaves* glaucous, exceedingly thin in texture, the upper ones cordate and stem-embracing at the base, becoming gradually more attenuated as they stand lower on the stem, the lower ones decidedly petiolate; radical leaves petiolate, broadly lanceolate, attenuated at the base, and gradually terminating in the margin of the pubescent petiole. *Peduncles* rather long, arising from the axils of the leaves, and each producing from six to eight flowers. *Pedicels* short, which, as well as calyxes and corollas, are covered with minute glandular pubescence. *Calyx* short, with acute subreflexed segments. *Corolla* about an inch in length, of a fine violet blue, with a white or cream-coloured mouth, compressed longitudinally above, with three plaits or folds beneath, upper lip short, with two erecto-reflexed lobes, the lower lip somewhat elongated, villous within, divided into three rounded lobes, of which the middle one is the smallest; beard of the sterile filament of a pale yellow.

An exceedingly pretty and delicate species, in the collection of the Birmingham Botanical and Horticultural Society, to which establishment it was sent last year, with other rarities, from the garden of Trinity College, Dublin, by its indefatigable curator Mr. J. T. Mackay, who informs us that he raised it from seeds received by him from Mr. Murray of the Botanic Garden, Glasgow. It is a native of Ohio, one of the United States of America, where it was found by the late Mr. Drummond, when on his journey to Mexico in 1834. Mr. Cameron is fortunate in having preserved it, as the plant in the Dublin garden, and the few rooted cuttings that were raised from it, all perished last winter.

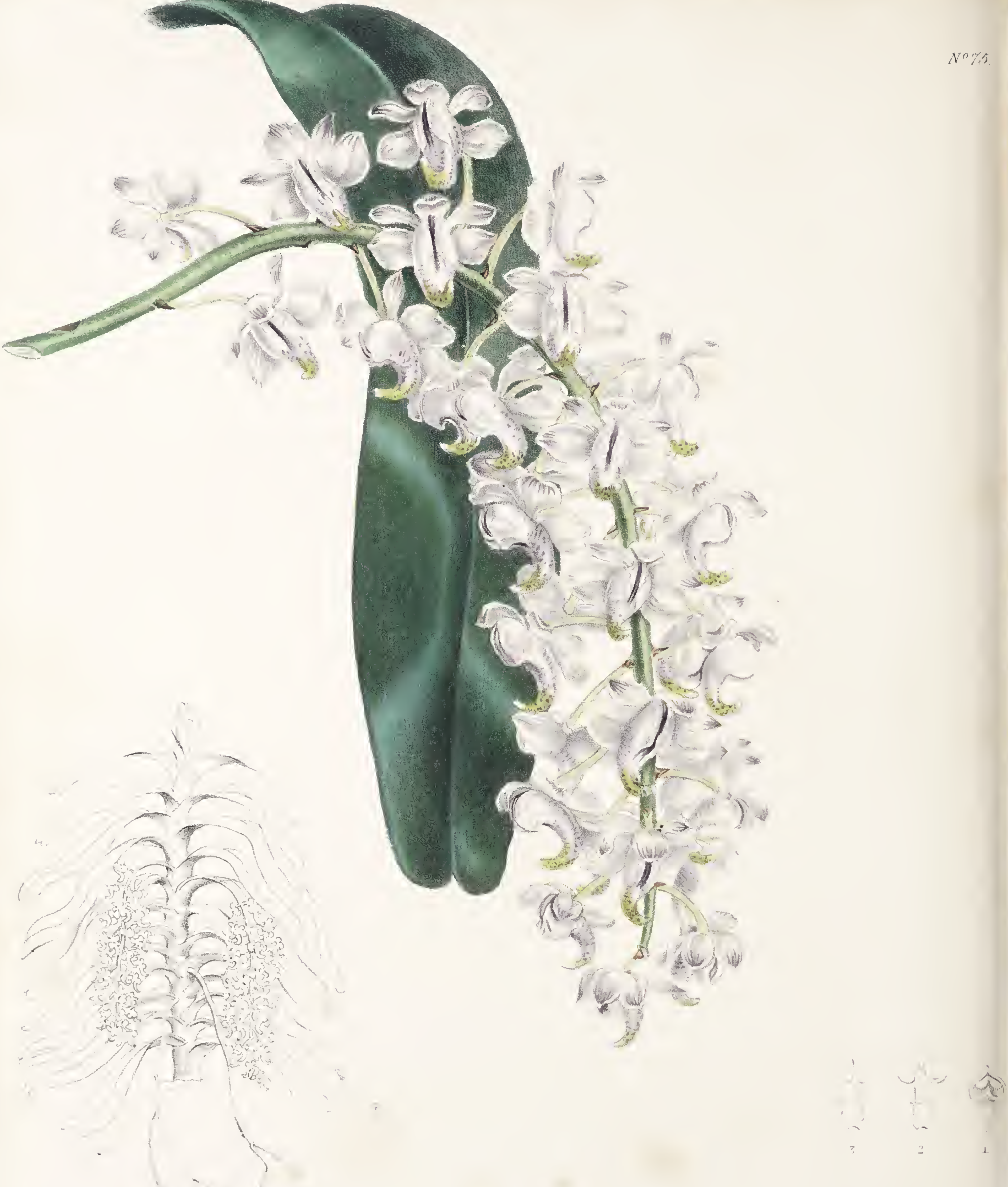
It comes near to *P. pubescens*, but is altogether a smaller and more delicate plant; the pubescence, too, is not simply downy, but glandular; while the denticulate margin of the leaves is also, when carefully examined, distinctly glandular. It must necessarily be equally distinct from *P. hirsutum*. It approaches very closely to *P. lævigatum*, but at the same time may be readily distinguished from that species.

It appears to thrive in any common garden soil, and may be increased readily by dividing, either in September or April. It appears to be more decidedly herbaceous than many of the other species.

The genus *Pentstemon* belongs to the natural order *Scrophulariaceæ*, and is arranged by Bentham in the section *Digitaleæ* (the Foxglove section), with which it agrees in certain important characters. *Pentstemon* is closely allied to *Chelone*, from which it has been distinguished by its angular seeds; those of *Chelone* being surrounded by a membranous margin. The generic name *Pentstemon* is derived from πεντε, five, and στημων, a stamen, in allusion to the additional or fifth *sterile* stamen, the usual number in *Scrophulariaceæ* being *four*, which are didynamous, or two long and two short. The specific name we have selected in compliment to our esteemed correspondent Mr. J. F. Mackay, whose zeal in the pursuit of botanical science is too well known to every botanist in Europe to require from us any lengthened eulogium.

Fig. 1, corolla laid open; 2, germ, style, and stigma.

N^o. 75.



Aerides Odoratum

Mills del.

Day & Haghe Lith^rs to the Q

AERIDES ODORATUM.

(Fragrant Air-plant.)

LINNEAN SYSTEM.	NATURAL ORDER.
GYNANDRIA MONANDRIA.	ORCHIDACEÆ § VANDEÆ.

GENERIC CHARACTER.

Aerides (Lour.) *Perianthium* patens vel clausum. *Sepala* lateralia, basi sæpiùs obliqua, cum ungue producto columnæ connata. *Labellum* cum ungue columnæ articulatum, saccatum vel calcaratum, trilobum: lobis lateralibus nanis; limbo cucullato, aut subulato, aut abbreviato-tumido, aut subfornicato. *Columna* in ovarium recumbens, brevis, aptera. *Anthera* bilocularis. *Pollinia* 2, posticè sulcatâ; caudiculâ latâ vel filiformi, glandulâ peltatâ subrotundâ.—Herbæ *epiphytæ* caulescentes. *Caules* subsimplices, radicantes. *Folia* disticha, coriacea, aut subcarnosa. *Flores* racemosi, vel spicati. (*Lindl. Gen. et Sp. Orch.*)

Perianth open or closed. Lateral *sepals* generally oblique at the base, connate with the lengthened claw of the column. *Lip* articulated with the claw of the column, saccate or spurred, 3-lobed: lateral lobes small; limb hooded, either awl-shaped or short and tumid, or somewhat arched. *Column* resting on the ovarium, short, wingless. *Anther* 2-celled. *Pollen-masses* 2, furrowed behind; caudicula broad or thread-shaped, gland peltate, somewhat round.—Plants *epiphytic*, caulescent. *Stems* rather simple, rooting. *Leaves* in two opposite rows (distichous), leathery or rather fleshy. *Flowers* racemose or spiked.

SPECIFIC CHARACTER.

A. odoratum; *foliis* flaccidis apice obtusis obliquis, *racemis* pendulis multifloris foliis longioribus, *labelli* cucullati infundibularis laciniis lateralibus erectis cuneatis rotundatis intermediâ ovatâ acutâ inflexâ, calcare conico incurvo. (*Lindl.*)

Leaves flaccid, obtuse and oblique at the apex, *racemes* pendulous, many-flowered, longer than the leaves; *lip* hooded, funnel-shaped, with the lateral lobes erect, wedge-shaped, rounded, the middle lobe ovate, acute, inflexed, spur conical, incurved.

Aerides *odoratum. Lour. Flor. Cochinch.* 525.—*Lindl. Gen. et Sp.*—*R. Brown in Hort. Kew.* 5. 212.

Aerides *cornutum. Roxb. Hort. Beng.* p. 63.—*Lindl. Bot. Reg.* t. 1485.

Descr.—*Stem* branched, somewhat thick, throwing out long, tortuous, aerial roots. *Leaves* thick, leathery, with an oblique, obtuse apex, arranged in a distichous manner. *Bracteæ* short, ovate, rigid. *Flowers* of a delicate flesh-colour, tinted with rose, exceedingly fragrant. *Sepals* spreading; the upper one ovate, obtuse, a little narrowed at the base, lower ones united with the base of the column. *Petals* spreading, corresponding in form with the upper sepal. *Lip* funnel-shaped, spurred, articulated with the foot of the column, and divided into three converging lobes: lateral lobes erect, rounded, middle lobe linear-lanceolate: spur conical, incurved. *Column* short, much lengthened at the base, channelled, hidden by the converging lobes of the lip. *Clinandrium* rostrate. *Anther-case* rostrate. *Pollen-masses* globose, *gland* obovate.

For an opportunity of figuring this most lovely plant we are indebted to the Right Honourable the Earl of Stamford and Warrington, from whose rich collection at Enville we were obligingly furnished with a specimen by his Lordship's intelligent and excellent gardener, Mr. John Beddard. It is a native of India, and was originally obtained from Dacca, a district of Bengal, by Dr. Roxburgh; and subsequently from Noakote, in the kingdom of Nepaul, by Dr. Wallich. It was introduced to this country about the year 1800, but although at present by no means unfrequently met with in collections, it is rarely seen in flower. It is, however, richly deserving of a place in the stove of every cultivator of orchidaceous plants; for when to the graceful appearance of its long, pendulous racemes, and the delicate colour of its thickly-clustered flowers, are superadded the delicious fragrance they exhale, and the length of time they endure, this plant must unquestionably be regarded as one of the most interesting and delightful of Flora's productions.

A very considerable number of the orchidaceous tribe of plants are *epiphytes*, that is, they grow upon other plants, attaching themselves to the branches of trees, or to fallen and decayed timber in tropical regions. The genera *Aerides*, *Vanda*, and *Renanthera*, are of this description, and have been long known to botanists under the common appellation of "*Air Plants*," from the circumstance of their deriving their nourishment chiefly from the atmosphere through the medium of their fleshy, tortuous, absorbent roots. They appear, in fact, to possess this power in a more marked degree than their congeners; for it is well known that the Chinese and other Eastern nations are in the habit of removing these plants from the place of their growth, and suspending them in their apartments, where they will remain in perfection for many weeks, or, in some instances, even for many months; and by the delicacy or richness of their colours, or by the diffusion of the most exquisite odours, commanding the admiration of every spectator.

The *epiphyte* must consequently be regarded as differing manifestly from the *parasite;* for while the former (like our present plant) simply grasps with its roots the plant upon which it vegetates, and upon which it may be said to depend merely for its locality, the latter (like the mistletoe, *viscum album*) not only grows upon other trees, but becomes actually united with and derives its nourishment from the tree upon which it lives.

The generic name, *Aerides*, is derived from *aer*, the air; in allusion to the power possessed by the species of this, as well as many other orchidaceous genera, of living apparently by atmospheric absorption. The specific name, *odoratum*, refers to the fragrance for which it is remarkable.

Fig. 1, the 2-celled anther-case; 2, anterior view of the pollen-masses, caudicula, and gland; posterior view of the same.

ON THE CULTIVATION OF THE AURICULA.

Among the numerous favourites of the flower-garden, no one has been longer held in estimation or attracted more notice than the auricula. Ever since this plant has been transferred from its native mountains to the flower-garden, it has been treated and ranked as a stage flower. Florists designate the objects of their care into stage, bed, and border flowers. The first are cultivated in pots; the second on raised beds; and the last are distributed all over the plots and borders of the garden in the natural soil.

The auricula being naturally fond of a dry situation and dry air, is found to succeed better in pots upon a raised stage, and where it can be protected from immoderate rain and ardent sunshine, than when planted in the open ground, exposed to all weathers. That too much moisture is inimical to the plant is evident, from a natural covering of soft meal spread over both the leaves and flowers, and which sheds the drops of rain effectually; and this property is an indication to the cultivator to keep his plants always sheltered from heavy rain.

The inflorescence of this plant is expanded in elegant trusses, beautifully formed, richly coloured, and exquisitely scented; of course it has always been a choice flower among amateurs as well as professional florists, and the methods of culture are definite though not generally known.

Auriculas are raised from seed to originate new varieties, and the old sorts are propagated by slips. Plants which are extended to yield seeds are called breeders. These are removed away from the collection, and placed in company with such estimable sorts as will have a tendency to improve by the intermixture of their pollen the seeds of the breeders. This intermixture or impregnation of the inferior flowers with the pollen of superior sorts may be effected by manual assistance; and it is usual among florists to lend this assistance, rather than trust entirely to the action of the wind, or of insects, the natural agents in this affair.

The breeders should be placed where they may receive the morning and evening sun, but not that of noon. All the smallest and decayed pips should be cut out with scissors, the strongest only being left to mature seed. When the seed-vessels become dry and brown, they may be gathered and kept in a place *not too dry*, till January or February, when the seeds may be shaken out and sown. They may be sown in boxes or seed-pans, well drained, and filled with fine compost, being pressed smoothly down half an inch below the rim, and the surface raised a little in the middle. Sow regularly, and cover with a very light coat of sifted compost. Water lightly, and place the pans in a mild hotbed, where there is neither too much moisture nor too much mid-day sun; that is, they should be shaded from the latter. The seed-pans should be raised as near to the glass as possible; so necessary is this for assisting the germination of the seeds, that growers usually cover the pans with flat pieces of glass. Should the surface become too dry, either before or after the seedlings appear, a gentle sprinkling of tepid water may be given to encourage the growth.

Soon as the seedlings are large enough, they should be pricked out two inches asunder, into middle-sized pots, filled with proper compost, and particularly well drained. In these they are nursed till August, when they may again be removed into the smallest-sized pots (sixties), in which they are to remain to flower.

The best compost for auriculas is found to be a mixture of equal quantities of fresh yellow loam, rotten cow-dung, night soil two years old, leaf-mould, and to which is added, about a tenth of sea or river sand. For top-dressing in February, the compost may be further enriched by the addition of moderate portions of the dung of poultry, sugar-baker's scum, or decomposed sheep droppings. But however rich and suitable the compost may be, fresh, dry air is indispensable, as the auricula seldom thrives in a low and moist situation.

The best season for shifting the plants from small to larger pots is about the beginning of August. Some strong individuals may require shifting sooner, even immediately after flowering; and these, and all others, when shifted, if encumbered by side shoots, may be cut or slipped off, and placed in small pots, to make roots, if an increase of the kind be required. In the business of shifting, every ball should be examined; some may be saddened, and require reducing, in order to admit a sufficient addition of fresh compost in the shift. Such as are full of healthy roots, and the compost in good and sweet condition, will only require to be placed in a somewhat larger pot; and in all cases of potting, the plant should be so placed as the lower leaves be half an inch above the surface of the soil, and this about one inch beneath the rim of the pot. This depth beneath the rim is intended to admit as large a top-dressing as possible in the spring to assist the plants to flower strongly.

After the shifting, the plants are set in an airy but somewhat shady place, until they have made fresh roots, and be fit to take their place on the stage for the winter. Auricula stages, of several shelves, are usually formed within a slight wooden building, in form of an alcove. It is open in front to admit the south-east sun. The roof slopes backwards, and should be formed of moveable panels to admit a warm shower occasionally. Here the collection is kept during winter, and throughout the flowering season. In very severe frosts, coverings and curtains of mats are employed; and temporary shades are used to keep off the mid-day sun after the flowers are blown.

Constant attention is required to keep the plants in health, and free from decayed leaves, moss, or other litter on the surface of the pots; and water must be given in moderate quantities as often as each plant requires it.

The opening of the first flowers of the seedlings is particularly interesting to the cultivator; for though he may expect to have many inferior flowers, fit only to be transferred to the common flower borders, he may, by chance, have some first-rate beauties, which will well repay all his labour. This is a source of constant delight to a florist, which cannot be felt but by the lover of flowers; and this entirely independent of the beauty of their colours, or the elegance of their forms.

The polyanthus is cultivated in many respects like the auricula; but being a much hardier plant, and less impatient of cold and moisture, is seldom advanced to the stage, or potted, and is therefore successfully grown on shady borders in the open ground. The forms and disposition of the tints of the flowers of both the polyanthus and auricula ought to correspond, in order to meet the admiration and notice of the professional florist. For instance, the colours must be clear and distinct; the central opening, or throat, should be surrounded by a raised cup, and well filled with the anthers; if only the style be seen, the flower is said to be *pin-eyed* and worthless, notwithstanding both its form and colours are unexceptionable. It must be confessed, however, that there are certain fanciful refinements in judging of flowers, which cannot be said to be always consistent with pure taste.

AN EXCELLENT METHOD OF CULTIVATING HORSE-RADISH, FOR THE USE OF THE TABLE.

BY DAVID CAMERON, A.L.S., BOTANIC GARDEN, EDGBASTON.

HORSE-RADISH being an article used in almost every family, and being sometimes, when planted in light poor soil, difficult to be obtained of a good size, and in clean straight sticks, the following method of growing it is recommended to the readers of the Floral Cabinet, by attention to which the produce will be much improved both in flavour and quality beyond that which is usually obtained by the ordinary method of cultivation; but more particularly that cultivated in poor light soils.

In the beginning of March, if the weather be dry, trench as much ground as is wanted for the purpose *three feet deep*, mixing with the soil a good portion of half-rotten manure, and then level the bed. Take up the old bed of horse-radish, which is best done by opening a trench full three feet deep at the one side, and working over the whole bed to that depth so as to ensure the getting up the roots at their full length. Those fit for use should be selected, cutting off the crowns with about three inches of the root attached. These crowns are the sets for the new bed, which must be planted in rows eighteen inches asunder, and the plants eight inches apart in the rows. Take a stick two inches in diameter, and with it make holes full two feet deep, into each of which drop one of the crowns of the horse-radish, *taking care that the crowns reach the bottom of the holes.* When the whole is planted, rake the bed over to fill the cavities. As the sets grow, the crowns will ascend erect until they reach the surface, forming long straight sticks, which will be ready for taking up in the following spring. When taken up, their crowns should be preserved for planting the next bed.

The sticks for use may be earthed into any convenient place in the garden, and taken out as wanted during the whole season. Beds managed in this way have a regular and neat appearance, while those managed in the ordinary way are unsightly, and on that account are generally seen placed in the least frequented part of the garden.

ON THE CULTIVATION OF IXIA, GLADIOLUS, WATSONIA, &c.

BY DAVID CAMERON, A.L.S.

The various species of Ixia, Gladiolus, Watsonia, Sparaxis, Lachenalia, and other kindred genera, may be grown successfully by various methods, either in the greenhouse, the cold pit, the frame, or in some sheltered gardens in the borders, under the front of the houses, or beneath the shelter of a south wall. But in whatever way they are grown, if they succeed, they will amply repay by their beauty the trouble bestowed upon them.

When grown in the greenhouse, they should be taken out of the pots, and repotted in fresh soil about November, just before they commence growing. The full-sized bulbs should be selected and potted from three to eight or ten in a pot, according to the size of the bulbs, in a mixture of peat, loam, and sharp sand, using plenty of drainers in the bottoms of the pots. Where increase is wanted, the small bulbs may also be potted thicker, to form flowering bulbs for potting in the ensuing autumn. After potting, settle the soil by a watering overhead with a fine-rosed watering-pan. The best situation for them in the greenhouse from November until they have done flowering in spring, is on a shelf placed against the back wall, as high and as near the glass as possible, so as to allow sufficient space for watering. They should be sparingly watered at first, the quantity gradually increased as they begin to grow, but at no time ought water to be given to excess. Abundance of air should be admitted every fine day. When they have done flowering, the water ought to be diminished in quantity; and as the foliage decays, the pots may be brought down from the shelves, and placed in any convenient situation, even under the stage of the greenhouse, light being of no consequence during their dormant state, nor will they stand in need of any water. Some growers take the bulbs out of the soil for a time, but such a practice is unnecessary, and by remaining in the pots the sorts are not so liable to get mixed or lost.

Some of the late-flowering species of Gladiolus and Watsonia, after being kept in the greenhouse during winter, may be turned out into the border in May, where they will flower longer, and much finer, more especially *Gladiolus Cardinalis*, Natallensis, &c.; when grown in pits or frames, the treatment will be similar, keeping the pots always as near the glass as possible, and covering well during severe weather; for if injured by frost, they seldom flower well that season; they will, notwithstanding, endure a considerable degree of frost.

When grown in the open border, the soil ought to be from fifteen to eighteen inches deep, of a compost similar to that recommended for potting, and should be perfectly dry at the bottom, either naturally so, or by being well drained. The bulbs should be planted three inches deep, and the soil kept as loose as possible during the winter, which assists in preventing the bulbs from being injured by damp, and more effectually obviates the effects of frost. The bulbs should be taken up when thoroughly ripe after flowering, and not planted again until the end of November, or later if they can be kept from vegetating. If the bulbs could be kept dormant until spring, there would then be no difficulty in growing them out of doors; but as natives of the southern hemisphere, their natural season for growing is during our winter, when they are liable to be injured by frost. The beds ought to be protected by twigs of broom or birch, which is a better protection than any close covering, except in long-continued severe weather. Occasional watering should be attended to if the season be hot and dry when the plants are coming into flower. Shading them when in flower, will also prolong their duration.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

ÆSCULACEÆ. Lindl.

Æsculus Ohiotensis. Mich. Ohio Horse Chesnut. *Bot. Reg.* N. S. t. 51. This handsome species is found in the Atlantic part of the United States, especially on the banks of the Ohio between Pittsburgh and Marietta, where it is extremely common, and called the buck'sey-e; but Michaux, who first noticed it, adds, it is not to be confounded with the plant called by that name in Virginia and North Carolina, which is the *Pavia lutea.* The ordinary height of the tree is described by Michaux to be not more than from ten to twenty feet, but he found specimens as much as thirty-five feet high. He states the fruit to be spiny, and about half the size of that of the common horse-chesnut, the back of the old bark to be blackish, and the liber to have a strong disagreeable odour. In addition to Michaux's account of the plant, and the improbability that a species found wild only in Ohio, and confined to a limited region, should be the same with a native of the west coast of Asia, there are ample differences between this buck's-eye chesnut and the horse chesnut in their foliage. The leaflets of the former are obovate-lanceolate, finely serrated, flat and pale-green, with a very even surface; of the latter, obovate, coarsely serrated, wavy, and dark-green, with a very rugose and uneven surface. The shoots of the horse-chesnut are smooth; those of the buck's-eye chesnut are covered with a fine short soft down. Finally, the latter species in this climate is a much more rapid-growing tree than the former. It flowers in May, and may be increased by either grafting in the spring, or by budding in the summer, on the common horse chesnut; the grafts and buds should be worked as near the ground as possible, to prevent the unsightly appearance of the buck's eye growing out of the stick. It is hardy. *Bot. Reg.*

LEGUMINOSÆ. Juss.

Lathyrus purpureo-cæruleus. Purplish-blue Lathyrus. Suffruticosus, caule angulato; foliis unijugis, foliolis brevè pedunculatis lanceolatis subpubescentibus mucronatis: cirrhis solitariis: stipulis minutis: floribus 6-8 racemosis foliis longioribus purpureo-cæruleis.

This is an exceedingly pretty and distinct species, in the collection of the Birmingham Botanical and Horticultural Society, and was raised from seeds presented to that establishment last year by Mrs. Charles Shaw, of Birmingham. It is a native of South America, and appears perfectly hardy, having stood the severity of last winter against a south wall uninjured. It is our intention to give a further description of it, with a figure, in a forthcoming number.

PRIMULACEÆ. Lindl.

Cyclamen Neapolitanum. Ten. Neapolitan Cyclamen. *Bot. Reg.* N. S. t. 49. This is a pretty species long known to our gardens, and is even wild, or naturalised in the county of Kent. It is, however, most abundant in the countries near the Mediterranean, particularly in Italy, south of the Apennines. The name of Neapolitanum was given to it by Professor Tenore, who was the first to distinguish it critically from its congeners, with which it had long been confounded under the names C. hederifolium and C. Europæum, two very different plants. *Bot. Reg.*

LOBELIACEÆ. Lindl.

Lobelia fenestralis. Cav. Loop-holed Lobelia. *Bot. Reg.* N. S. t. 47. This is a species of no great beauty, found by Humboldt and Bonpland in the temperate part of Mexico, near the city itself, Chapoltepec, and Pazcuaro, at the height of nearly 6600 feet. Seeds have recently been obtained by George Frederic Dickson, Esq., from the same country, and presented by that gentleman to the London Horticultural Society. It is a half-hardy biennial, growing from two to three feet high, and flowering freely from July to September if planted in any well-manured soil, and freely supplied during the growing season. *Bot. Reg.*

THYMELEÆ. Juss.

Pimelea crinita. Lindl. This species bears snow-white flowers, smelling slightly of Heliotrope, and forms a small shaggy greenhouse bush. It is a native of the Swan River, and has lately flowered in the rich collection of R. Mangles, Esq., Sunning Hill. *Bot. Reg.*

MONOCOTYLEDONES.

AMARYLLIDACEÆ. Lindl.

Ismene Macleana. Hook. Mr. M'Lean's Amancaes. *Bot. Mag.* t. 3675. This is said to be a new species by the Hon. and Rev. Mr. Herbert. It bears pale yellow flowers, which are delightfully fragrant. Its nearest affinity is with I. pedunculata. It is a native of Lima. *Bot. Mag.*

IRIDACEÆ. Lindl.

Gladiolus Mortonius. Herb. Mr. Morton's Gladiolus. *Bot. Mag.* t. 3680. This is a new species bearing delicate pinkish blossoms, a native of the east coast of Southern Africa; it has some affinity with Gladiolus oppositiflorus. Herb. But is not half so tall. *Bot. Mag.*

LILIACEÆ. Lindl.

Tulipa Gesneriana. Linn. Gesner's Tulip. *Bot. Reg.* N. S. t. 46. This species is supposed to be the parent of all the garden sorts. It is found without any disposition to vary in three places near Florence: Le Rose, a farm on the road to Sienna; Galluzzo, four miles from Florence; and in the Val d'Arno, not far from the city on the south side. The form of the flower, its robustness, and its smoothness, appear sufficient evidence of its identity with the self tulips, from which the gay varieties of the tulip-fancier are bred. *Bot. Reg.*

Thysanotus tenuis. Lindl. Slender Thysanotus. *Bot. Reg.* N. S. t. 50. A new species bearing purplish flowers, obtained from the Swan River, by R. Mangles, Esq., in whose collection at Sunning Hill it flowered in May 1837. This genus approaches near to Trichopetalum, which differs in little beyond its polyspermous seed-vessel. It may be propagated by seeds. *Bot. Reg.*

ORCHIDACEÆ. Lindl. § VANDEÆ. Lindl.

Oncidium raniferum. Lindl. Frog-bearing Oncidium. *Bot. Reg.* N. S. t. 48. This is a very small species of this extensive genus, and hangs down from the branches of trees instead of growing erect.

It is a native of Brazil and the Organ Mountains, and M. Descourtilz met with it in the damp forests near Bananal; this traveller observes, that it fixes itself to branches not exceeding twelve feet in distance from the earth. This species must be cultivated in a very damp stove, where it may be either tied to a piece of wood suspended from the roof, or grown in a pot. *Bot. Reg.*

§ EPIDENDREÆ.

Nemaconia graminifolia. Sepala conniventia lateralia cum basi productâ columnæ accreta. Petala subconformia minora cum sepalo supremo columnæ coadnata. Labellum ascendens revolutum apice bifidum cum basi productâ columnæ articulatum. Columna semiteres arcuata. Clinandrium subrotundum apice appendiculatum. Gynizus sublunatus. Anthera 4-locularis. Pollinia 4, angulata compressa. Caudiculis duobus pulvereis. Herba Mexicana.

Caulescent. Stem about a foot high, covered all over with dry papillose sheaths, destitute of leaves, and out of which shoot leafy branches about three inches long. Leaves alternate, linear, three-ribbed, sheathed at the base; sheaths covered with papillose excrescences, similar to those on the stem. Flowers in pairs, arising from the apex of the branches, sheathed at the base with sheaths similar to those on the leaves. Sepals ovate, acute, streaked with purple. Petals smaller than the sepals, obtuse, streaked like the sepals. Labellum bifid at the apex, revolute, marked like the sepals and petals. Column bowed, half-round. Gynizus somewhat crescent-shaped. Anther four-celled. Pollen-masses four, angular, compressed. Caudiculæ two, covered with a powdery substance; clinandrium apiculate at the apex.

This is a very singular plant, for while in the structure of the sepals, petals, and labellum, it very nearly approaches the genus Maxillaria, it has the pollinia and caudiculæ of the tribe Epidendreæ. The stems have a very remarkable appearance in not having a solitary leaf, but covered with husky papillose sheaths. The plant is not showy, but from its appearance seems to be a free flowerer.

It is a native of Kalappa, and was imported by George Barker, Esq., in the year 1837, in whose collection it is.

CALENDAR OF GARDENING OPERATIONS FOR OCTOBER.

Fires will now require to be lighted in the stoves, the flues of which ought to be cleaned before the winter commences. Continue to give plenty of air both day and night to the greenhouse until there is an indication of frost, when the houses ought to be shut close during the night, but opened to admit during the day as much air as the weather will allow.

Greenhouse plants ought to be watered more sparingly at this season, and in doing which avoid watering the leaves, for if watered at this season they soon turn yellow.

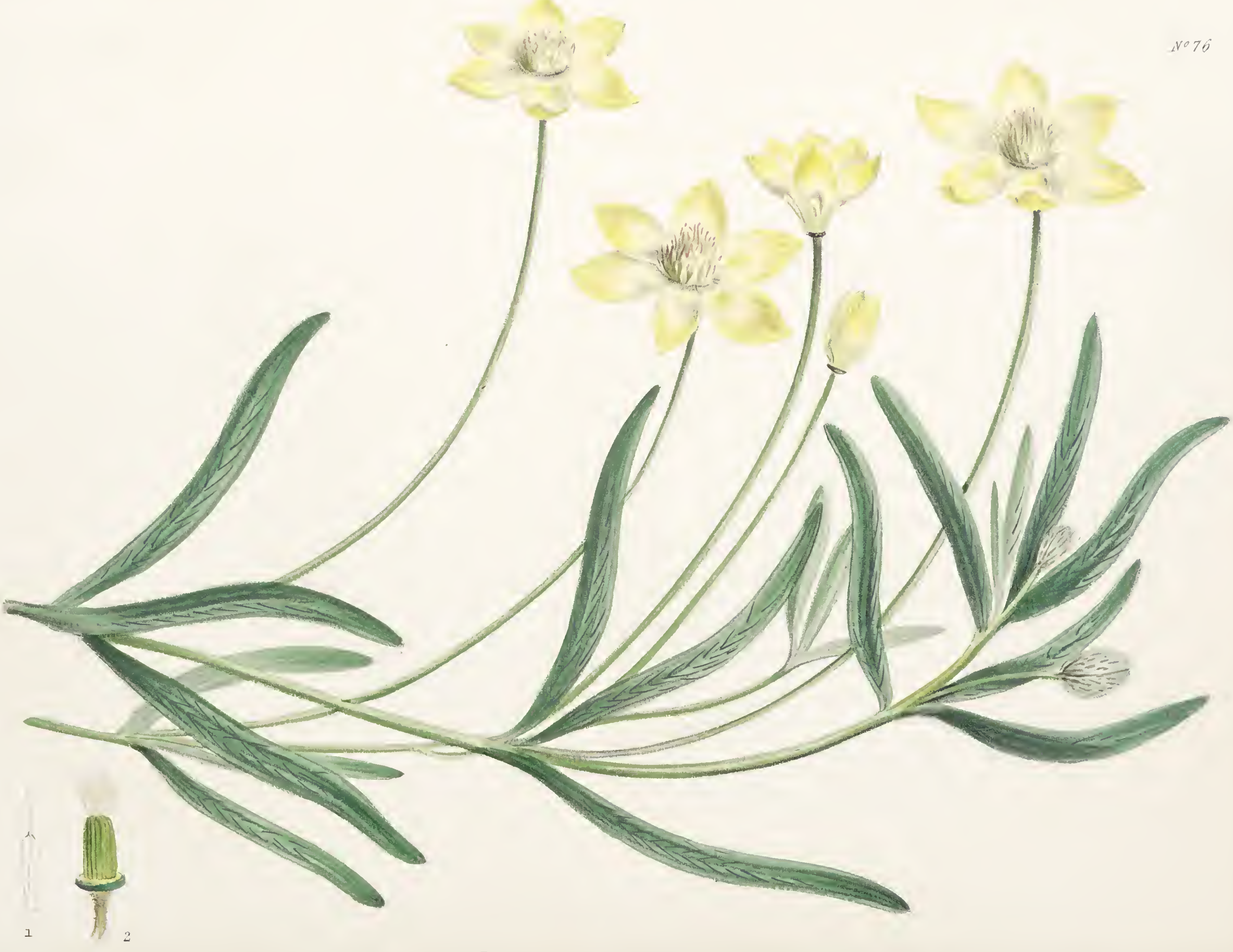
Put compost on the surface of the pots, if it were not done when they were brought into the greenhouse.

It is most probable that all Dahlia roots must be taken up and stored away early in this month. The almost universal rule is to take them up immediately after a night's frost which has cut off the tops. They may, however, be put away with sounder stems, by watching the appearance of the weather, and taking them up when it appears likely to be frosty. In taking them up the earth must be got out carefully from amongst the tubers, and afterwards put out in the sun every fine day until thoroughly dry.

Ixias, Gladioluses, Oxalises, and other Cape bulbs, will require to be re-potted about the end of the month, just when beginning to grow.

Cut down the stems of herbaceous plants as they go out of flower. If time will allow, the herbaceous plants will survive the winter much better if the borders are all fresh dug. This allows of their sending out fresh roots, and prevents much of the humidity that otherwise would be upon the surface of the beds, if allowed to remain firm and compact on the surface during the winter. The same benefit will arise by digging amongst shrubs at this season. Beds of Pansies from young plants previously struck may now be formed for spring flowering.

No 76



Platystemon Leiocarpus

Miss Green del.

Day & Haghe Lithrs to the Queen

PLATYSTEMON LEIOCARPUM.

(*Smooth-fruited Platystemon.*)

LINNEAN SYSTEM.
POLYANDRIA POLYGYNIA.

NATURAL ORDER.
PAPAVERACEÆ.—DEC.

GENERIC CHARACTER.

Platystemon (BENTHAM). *Flores* tremeri. *Sepala* 3, hispida. *Petala* 6, ordine duplici. *Stamina* subindefinita, filamentis petaloideis. *Antheris* linearibus rectis. *Carpella* 9—12 collateralia, stigmatibus linearibus, erectis simplicissimis; matura leviter cohærentia, indehiscentia, cartilaginea tortulosa; in articulos transversos monospermos secedentia. *Semina* lævia, ecristata, albumine oleoso. *Bentham. Bot. Reg.*, vol. xx. p. 1679.

Flowers in three parts. *Sepals* 3, hairy. *Petals* 6, arranged in a double row. *Stamens* somewhat indefinite; filaments resembling petals. *Anthers* linear, upright. *Carpels* from 9 to 12 arranged side by side, stigmas linear erect and simple; when mature slightly cohering, indehiscent, cartilaginous, twisted, separating into one-seeded transverse joints. *Seeds* smooth, not crested, albumen oily.

SPECIFIC CHARACTER.

P. leiocarpum, hirsutum, diffusum; *foliis* ternis lineari-lanceolatis; *scapo* axillari folio longiore unifloro; *floribus* pallidè-sulphureis; *capellis* glabris.

Hairy, diffuse; *leaves* arranged in threes, narrow, lanceolate; *scape* axillary, longer than the leaves, one-flowered; *flowers* pale sulphur colour; *carpels* smooth.

Platystemon leiocarpum.—*Fisch. et Meyer*, *Flor. Cab.*, p. 92.

DESCR.—*Plant* annual. *Stem* diffuse, more or less hairy, spreading a yard and upwards from the root, succulent, and from which when bruised issues a yellowish juice. *Leaves* glaucous, hairy, arranged in threes, narrow, lanceolate, unequal in size, obtuse, and having parallel unequal veins. *Scape* hairy, axillary, three times as long as the leaves, constantly one-flowered. *Sepals* three, quickly falling off, hairy, of a brownish colour. *Petals* six, arranged in threes, ovate, somewhat obtuse, shortly clawed, of a pale sulphur colour, and blotched at the apex with orange. *Stamens* numerous, inserted on the receptacle. *Filaments* skinny, four times as broad as the anthers, petaloid. *Anthers* erect. *Stigmas* numerous, as many as the carpels, pubescent. *Carpels* perfectly smooth, arranged side by side, and slightly united at the edges, but when mature separated into distinct carpels, which are articulated similarly to the legume of the genus Hedysarum, breaking into many portions, each portion containing one seed. *Seeds* when mature reniform, smooth and black. *Albumen*, as stated in the generic character, soft and oily.

THIS plant, which is nothing more than a smooth-fruited variety of *P. Californicum*, as noticed by us in the *Flor. Cab.* page 92, was raised from Russian seeds presented to the Birmingham Botanical and Horticultural Society, in which establishment it grows luxuriantly and flowers abundantly, covering a space of at least from three to four feet in circumference, and when in perfection is certainly a most delightful annual; but not more so than *P. Californicum*, which is cultivated near to it, and equally luxuriant. They appear both to ripen seeds freely. We have not been informed in what country the seeds were collected.

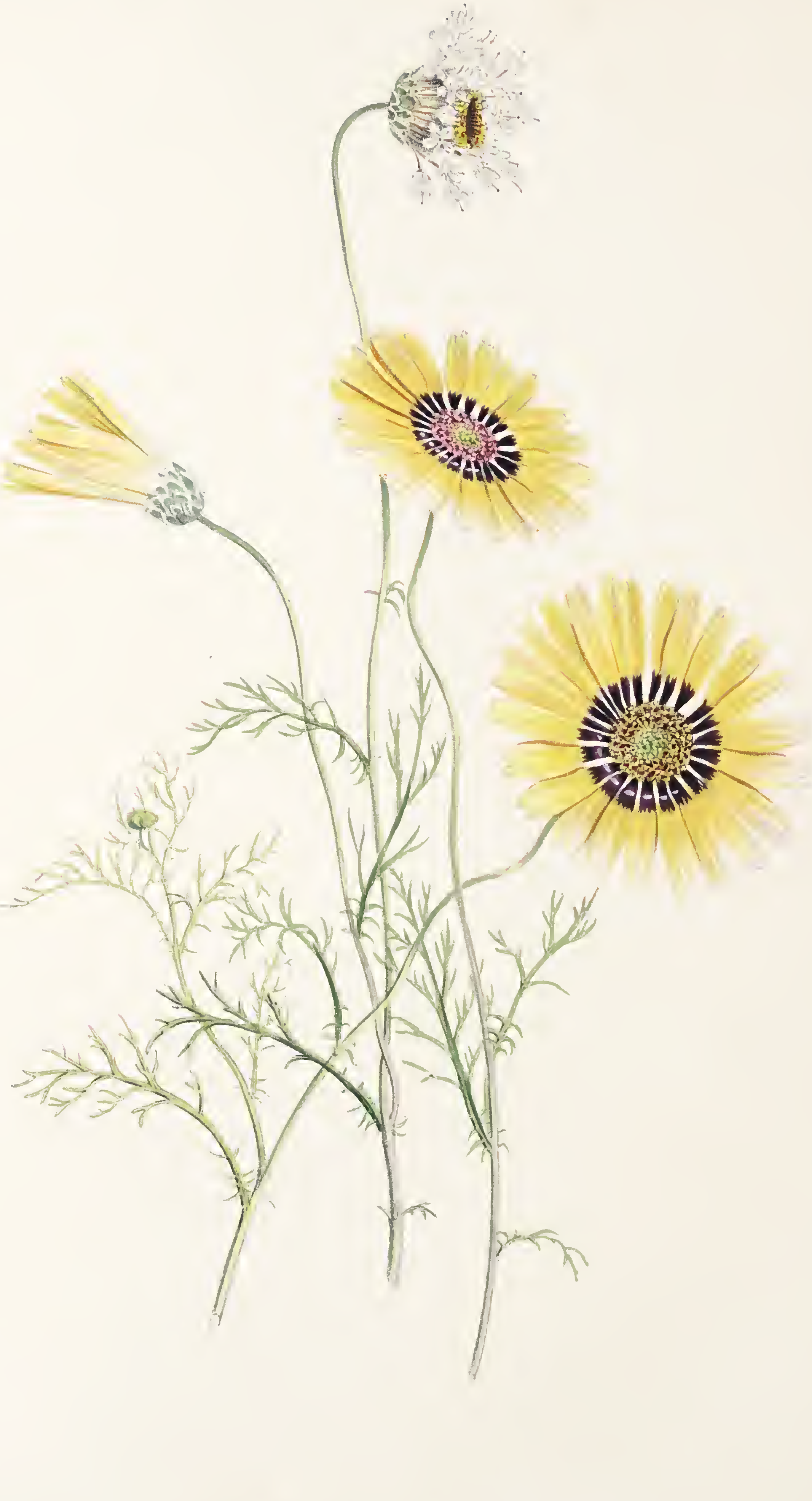
The genus *Platystemon* is exceedingly interesting, and singular in bearing strong affinity to two distinct natural orders, *Ranunculaceæ* and *Papaveraceæ*. It approaches *Ranunculaceæ* in its distinct carpels, but differs in having a deciduous calyx and oily albuminous seeds, in which respects it agrees with *Papaveraceæ;* while in the structure of its anthers and the carpels (which are articulated) it is very similar to those of the genus *Hypercoum*.

Indeed botanists consider it a connecting link between the two natural orders, and the different generic alliances have been arranged by Dr. Lindley in the Botanical Register, p. 1781, taking the genus *Papaver* as the type, until they pass gradually into the order *Ranunculaceæ*, which they do in the following manner:—Papaver—Meconopsis—Glaucium—Eschscholtzia Hypercoum—Platystemon—Trollius. We are not aware of any more being discovered except the two above mentioned, which are probably confined either to the northern parts of America, or to the northern parts of Europe.

Fig. 1, stamen; 2, germs and stigmas.

The generic name is from *πλατυς* broad, and *στημων* a stamen; in allusion to the great breadth of the filament.

No. 77.



Sphænogyne Speciosa.

Day & Haghe Lithrs to the Queen

SPHENOGYNE SPECIOSA.

(*Showy Sphenogyne.*)

LINNEAN SYSTEM.
POLYGAMIA FRUSTRANEA.

NATURAL ORDER.
COMPOSITÆ § SENECIONIDEÆ.—D.C.

GENERIC CHARACTER.

Sphenogyne (R. Br.) *Capitatum* multiflorum radiatum. *Floribus* radii ligulatis 1-serialibus neutris, disci tubulosis 5-dentatis hermaphroditis. *Receptaculum* paleaceum, paleis scariosis flores amplectentibus sæpius apice truncatis. *Involucrum* campanulatum multiseriale, squamis imbricatis, interioribus majoribus apice amplè scariosis. *Stylus* in ramos apice truncatos ferè cuneatos desinens. *Antheræ* appendice terminali subcordiformi superatæ. *Achenium* pilis mollibus e basi ortis cinctum, cylindraceum nec basi angustum. *Pappus* 1-serialis paleaceus, laminis obovatis cuneatisve obtusis antè anthesin contortarum more spiraliter dispositis, junioribus pellucidis, adultis lacteis opacis. *Herbæ* aut suffrutices Capenses anthemidis facie. *Folia* alterna sæpiùs pinnatiloba, rariùs trifida, imò integerrima. *Rami* apice pedunculiformes nudi 1-cephali. *Corollæ* flavæ aut apice fuscæ, ligulis interdùm subtùs rubris.—*Decandolle, Prod.* vol. v. p. 681.

Head many-flowered, rayed, flowers of the ray ligulate, in one row, neuter, those of the disc tubular, five-toothed, bearing male and female organs. *Receptacle* chaffy, shaft skinny, embracing the flowers, frequently truncate at the apex. *Involucrum* campanulate, many-rowed. *Scales* imbricate, the interior ones the larger, widely scarious at the apex. *Style* passing into truncate branches at the apex, almost wedge-shaped. *Anthers* crowned with a somewhat heart-shaped, terminal appendage. *Achenium* surrounded with soft hairs arising from the base, cylindrical, scarcely narrowed at the base. *Pappus* one-rowed, chaffy, divisions obovate, or cuneate, obtuse before flowering, and arranged in a spiral manner, the younger ones pellucid, the old ones milky and opake. *Herbaceous*, or suffruticose plants, natives of the Cape of Good Hope, having the appearance of camomile. *Leaves* alternate, oftentimes wing-lobed, rarely trifid, the lower ones entire. *Branches* peduncle-formed at the apex naked, bearing one head of flowers. *Corolla* yellow or brownish at the apex. *Ray* sometimes red on the under side.

SPECIFIC CHARACTER.

S. speciosa; *glabra* ramosa; *foliis* pinnatifidis, laciniis linearibus; *scapo* elongato subnudo, 1-cephalo; *involucris* acuminatis, margine fuscis; *squamis* intimis apice magnis scariosis; *ligulis* apice tridentatis croceis basi atrofuscis.

Smooth, branched, *leaves* pinnatifid, divisions linear; *scape* elongated, nearly naked, one-headed; *involucres* tapering, margin brown, the most inward *scales* with a large scarious appendage at the apex; *ray* three-toothed, deep yellow, dark brown at the base.

Sphenogyne speciosa.—*Hort.*

Sphenogyne versicolor.—*Dec.* ? *Prod.* vol. v. p. 681.

Descr.—Annual; stem smooth, about two feet high, branched. Leaves alternate, divided into winged lobes, having about four or five on each side, lobes linear, somewhat obtuse, mucronate at the apex. Scape long, nearly five times as long as the leaves, almost naked, having one leaf near the base. Involucrum four-rowed, scales acuminate, increasing in size from the base, the edges furnished with a brown scarious border, the innermost row having a broad white scarious margin. Lingulæ neuter, about an inch long, lanceolate, of a deep saffron colour, beautifully marked at the base with dark brown; at the apex three-toothed, the centre tooth depressed, and shorter than those on each side. Flowers of the disc hermaphrodite, five-toothed, surrounded by a paleaceous pappus, divided into five parts, each of which is furnished with a strong middle rib, on the exterior of which, near the apex of each division, is a dark brown fleshy spot. Anthers five, crowned with a heart-shaped appendage. Styles two, with brown brush-like stigmas. Receptacle chaffy, chaff longer than the achenium, truncate at the apex. Achenium wrinkled, scored, cylindrical, crowned with the paleaceous pappus, which after the flowers at the disc have fallen, develops itself and forms a ray round the apex; the base of the achenium is furnished with a few soft hairs, which are not clearly discernible until the plant is in seed.

This is an exceedingly pretty hardy annual, introduced about two years ago. Our drawing was made from a specimen in the collection of Messrs. Henderson, nurserymen, London. It is also in the nursery establishment of Mr. Stephen Yates, of Borderley Park, near Birmingham, by whose kindness we were supplied with specimens for making our description—those in the London establishment having decayed sooner than was expected.

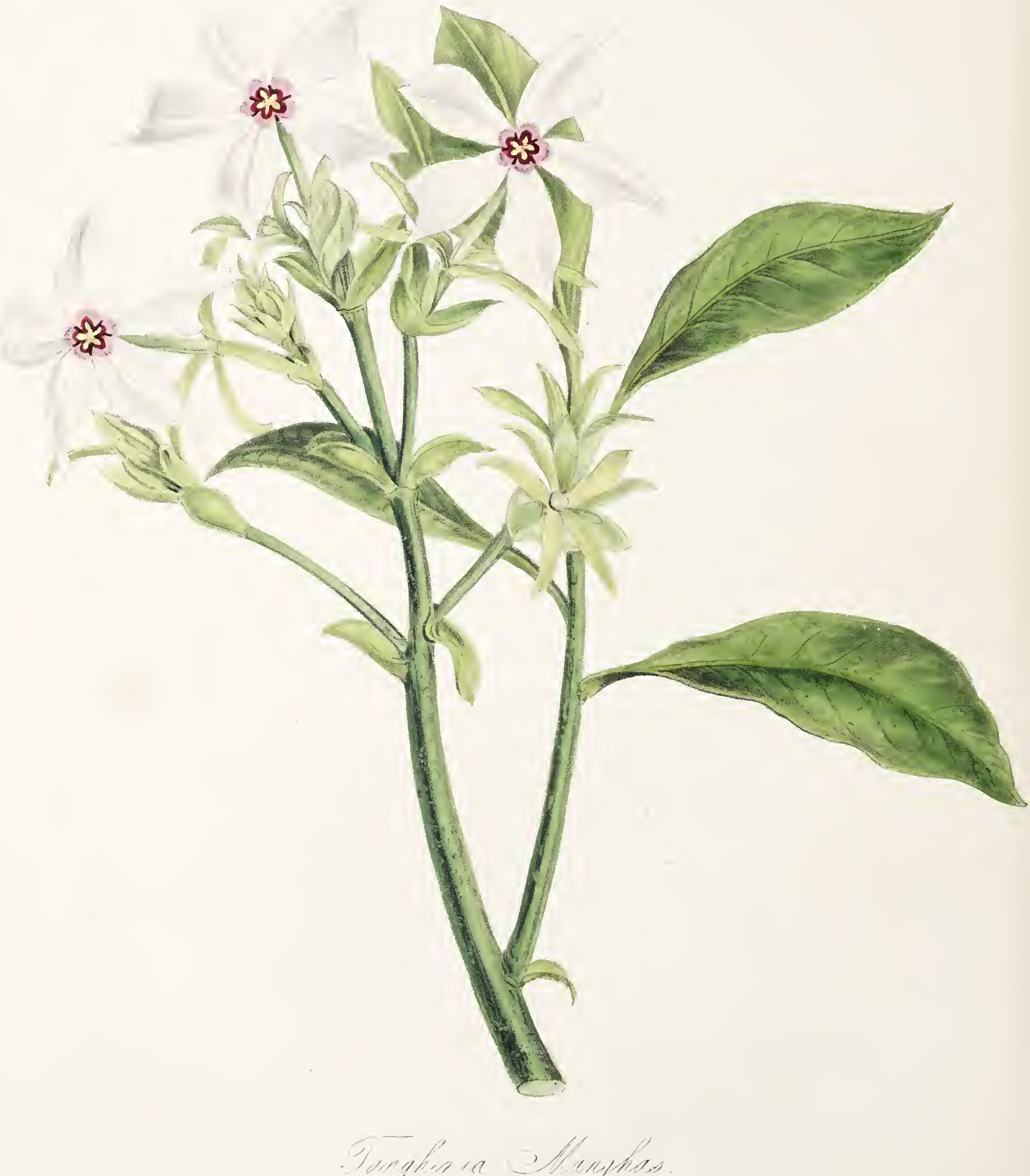
This plant is known in the nursery establishments under the name of *S. speciosa*, but on what authority we have not been informed. It approaches so near to *S. versicolor*, Dec., that we conceive it to be the same species; but not having seen a specimen of *S. versicolor*, and consequently being unable to satisfy ourselves of their identity, we are induced to retain the name *Speciosa*, rather than run the risk of creating confusion.

The pappus being persistent and arranged around the apex of the achenium, gives it a very singular appearance when the central florets have fallen; the hairs, too, surrounding the base of the achenium, are well worth a close examination, presenting under the microscope an articulated appearance, similar to the filaments of the genus *Tradescantia*.

We conceive this species would thrive well on ornamental rock-work; it requires no care, and will do well in any common garden soil, but in rich soil will thrive most luxuriantly. It can only be raised from seeds, which are perfected freely.

The generic name is from *σφὴν*, a wedge, and *γυνη*, a woman, referring to the wedge-shaped apex of the styles.

No 78.



Tanghinia Manghas.

F. Cameron del.

Day & Haghe Lithrs to the Queen.

TANGHINIA MANGHAS.

(*Manghas Tanghinia.*)

LINNEAN SYSTEM.	NATURAL ORDER.
PENTANDRIA MONOGYNIA.	APOCYNACEÆ.

GENERIC CHARACTER.

Tanghinia (Aub. du Pet. Thouars). *Calyx* 5-partitus, persistens. *Corolla* decidua calyce longior hypocrateriformis; *fauce* subpentagonâ dilatatâ 5-dentatâ; *limbo* plano contorto 5-lobo. *Stamina* 5; *filamentis* brevissimis dilatatione tubi insertis, tuberculoque glanduloso ad basin cujusque disposito. *Antheræ* crassæ cordiformes conniventes. *Ovarium* bilobum. *Stylus* 1, tubi longitudine æqualis. *Stigma* capitatum bilobum, annulo glanduloso cinctum, thecis antherarum inclusum.—(*Fructus* ovatus drupaceus; *nux* fibrosa utrinque acuta, unilateraliter fissa. *Seminis integumentum* membranaceum fibris tenuibus tunicæ nucis solummodò adhærens. *Albumen* crassum concavum, in sicco corneum. *Cotyledones* planæ tenues subcordatæ. *Embryo* superus inversus. Bojer). *Flor. Cab.*, vol. ii. p. 85.

Calyx 5-parted, persistent. *Corolla* deciduous, longer than the calyx, salver-shaped; *throat* somewhat pentagonal, dilated, 5-toothed; *limb* spreading, contorted, 5-lobed. *Stamens* 5, with very short filaments inserted in the dilated part of the tube, with a glandular tubercle at the base of each. *Anthers* thick, heart-shaped, connivent. *Ovarium* 2-lobed. *Style* 1, equal with the length of the tube. *Stigma* capitate, 2-lobed, girded by a glandular ring, and enclosed by the connivent anthers.—(*Fruit* ovate, drupaceous; *nut* fibrous, acute at both ends, cloven on one side. *Integument of the seed* membranaceous, merely adhering to the tunic of the nut by slender fibres. *Albumen* thick, concave, horny when dry. *Cotyledons* flat, thin, somewhat heart-shaped. *Embryo* superior, inverted.)

SPECIFIC CHARACTER.

T. Manghas; *foliis* oblongo-lanceolatis acutis vel apiculatis glabris nitidis margine subrevolutis basi attenuatis approximatis; *pedunculis* cylindraceis; *calycis* segmentis lineari-lanceolatis subreflexis; *corollæ* segmentis subovatis acutis valdè inæquilateris apice inflexis; *paniculo* terminali corymboso.—*Flores* magni albi inodori.

Leaves oblong-lanceolate, acute or apiculate, smooth, shining, with a somewhat revolute margin, attenuated at the base, approximate; *peduncles* cylindrical; segments of the *calyx* linear-lanceolate, somewhat reflexed; lobes of the *corolla* subovate, acute, very unequal-sided, inflexed at the apex; *panicle* terminal, corymbose.—*Flowers* large, white, scentless.

Cerbera Manghas, *Linn.* Sp. pl. 303.—*Flor. Zeylan.* n. 106. *Lam. Encycl.* 1, 61.—*Gærtn. de Fruct.* ii. t. 123, 124.

Cerbera lactaria, *Hamilt.*

Arbor lactaria, *Rumph. Amb.* ii. t. 81.

Descr.—A stove shrub from four to six feet high, attaining in its native country the height of twenty feet or more, and abounding in a milky juice. *Leaves* from four to six inches long, of a dark shining green above, paler beneath, with fine capillary, primary veins passing somewhat transversely from the mid-rib, and terminating in a submarginal one. *Panicle* spreading, corymbose, branches dichotomous or trichotomous, cylindrical, articulated at the base. *Flowers* generally arranged in threes; *calycine segments* linear-lanceolate, two of which are narrower than the others; *corolla* white, scentless, limb spreading, with a rose-coloured eye. *Drupe* large, ovate, containing 1-2 seeds, about the size of chesnuts.

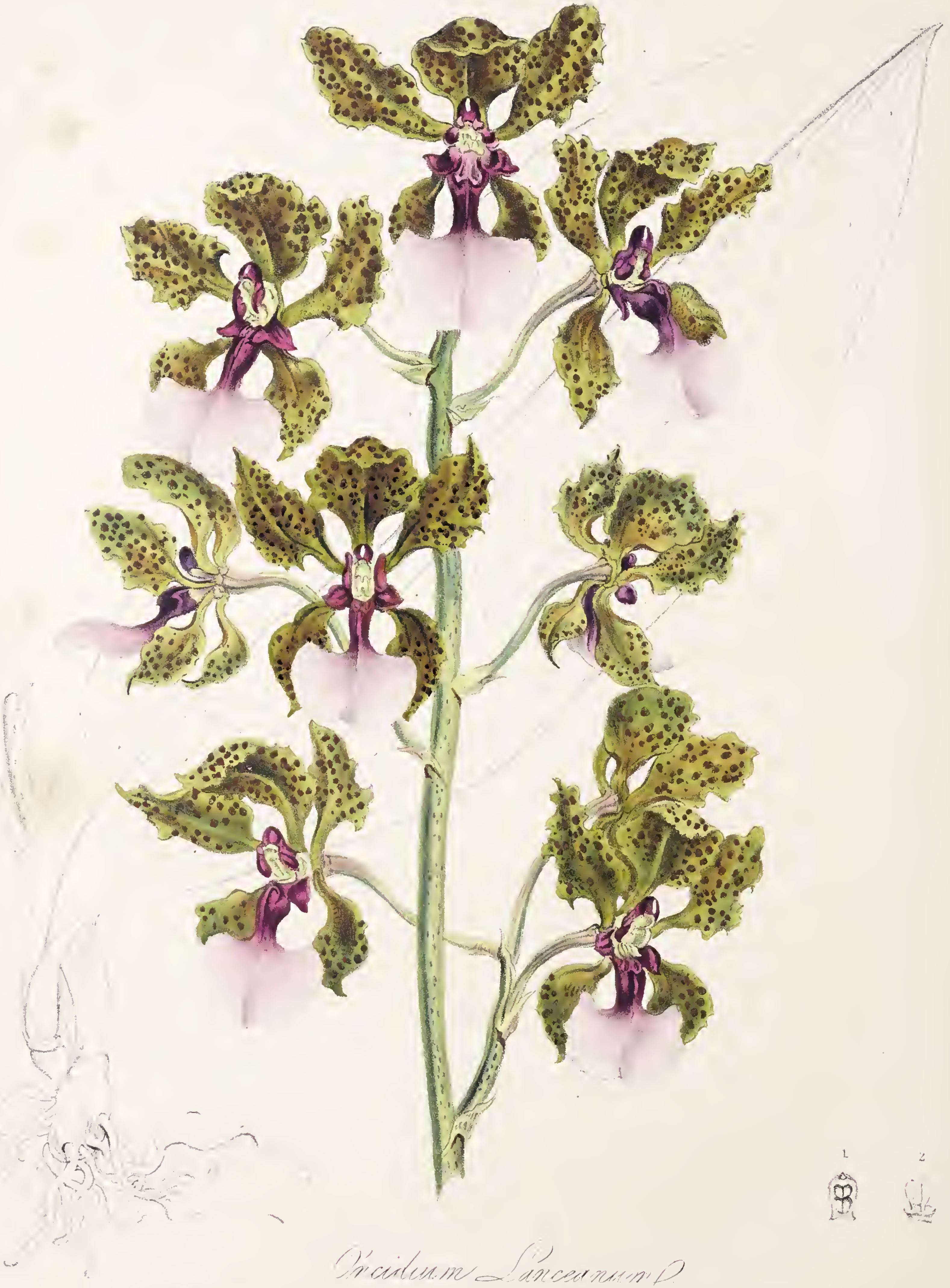
This very handsome shrub forms a conspicuous ornament in the stove, where its delicate white flowers, although void of scent, cannot fail to be admired. In its general habit, occasionally in the shape of the leaves, and in the crowded manner in which they are disposed at the tops of the branches, it somewhat resembles *T. veneniflua;* at the same time, a little accurate examination will detect a manifest difference between them: the leaves of *T. manghas* are less fleshy, their veins (which are also finer) are not so directly transverse; the segments of the calyx, though similar in colour (namely a very pale green), are linear-lanceolate (not ovate); while the flowers, which are three or four times larger, are white (not rose-colour). We have dwelt upon these points of difference between the two species (and more might be mentioned), because some distinguished botanists, who have probably had no opportunity of comparing the living plants, have suspected them to be identical.

The kernels of *T. manghas* are reputed to be emetic, and even poisonous, though probably not in the same degree as *T. veneniflua;* for the milky juice is said to be used as a purgative; and, according to Rumphius, the natives boil and eat the leaves mixed with other pot-herbs, which thus act as a gentle laxative: the bark is used in Java and Amboyna as a familiar cathartic, the action of which is stated to very similar to that of senna.

It is found in wet situations in many parts of the East Indies. It should be potted in peat, loam, and sand, with plenty of drainers at the bottoms of the pots: should be watered sparingly during the winter. Cuttings taken with a heel just before the plant commences growing in the spring, will strike in sand placed in a bottom heat without a glass.

The generic name, *Tanghinia*, was originally applied by the distinguished French botanist Aubert du Petit Thouars, to the noted ordeal-tree of Madagascar, called by the natives *Tanghen* or *Tanghin*, figured in No. 18 of our present volume, and of which some additional particulars are given in the miscellaneous matter of the present Number. *Manghas* is the vernacular name of this species in its native country.

Nº 79



Oncidium Lanceanum

W Green del.

Day & Haghe Lithrs

ONCIDIUM LANCEANUM.

(*Mr. Lance's Oncidium.*)

LINNEAN SYSTEM.
GYNANDRIA MONANDRIA.

NATURAL ORDER.
ORCHIDACEÆ § VANDEÆ.

GENERIC CHARACTER.

Oncidium (Swartz). *Perianthium* explanatum. *Sepala* sæpiùs undulata; lateralibus nunc sub labello connatis. *Petala* conformia. *Labellum* maximum, ecalcaratum, cum columnâ continuum variè lobatum, basi tuberculatum vel cristatum. *Columna* libera semiteres apice utrinque alata. *Anthera* semibilocularis rostello nunc abbreviato nunc elongato rostrato. *Pollnia* 2, posticè sulcata caudiculâ planâ glandulâ oblongâ. *Herbæ* epiphytæ, nunc pseudo bulbosæ. *Folia* coriacea. *Scapi* paniculati vaginati, rariùs simplices. *Flores* speciosi lutei sæpiùs maculati rarò albi.

Perianth explanate. *Sepals* most frequently undulate; the lateral ones sometimes connate beneath the labellum. *Petals* similar in form. *Labellum* very large, spurless, continuous with the column, variously lobed, tuberculated or crested at the base. *Column* free, semiterete, with the apex winged on both sides. *Anther* half 2-celled, rostellum sometimes short, sometimes elongated, beaked. *Pollen-masses* 2, furrowed behind, with a flat caudicula and an oblong gland. Epiphytic plants sometimes with pseudo bulbs. *Leaves* leathery. *Scapes* panicled, sheathed, more rarely simple. *Flowers* handsome, yellow, most frequently spotted, rarely white.

SPECIFIC CHARACTER.

O. Lanceanum; ebulbe, *foliis* oblongis acutis planis substriatis carnosis, *scapo* racemoso composito erecto rigido, racemulis confertifloris; *sepalis petalisque* conformibus oblongis obtusis carnosis concavis margine undulatis; *labelli* lobo medio dilatato subcuneato integerrimo basi hastato: lobis lateralibus semi-ovatis, cristâ trilobâ carnosâ jugoque elevato proclivi; *columnæ* alis carnosis rotundatis, *antherâ* cristatâ. (*Lindl.*)

Bulbless; *leaves* oblong, acute, flat, somewhat striated, fleshy; *scape* racemose, compound, erect, rigid; divisions of the raceme crowded with flowers; *sepals* and *petals* similar in form, oblong, obtuse, fleshy, concave, with an undulated margin; middle lobe of the lip dilated, rather wedge-shaped, very entire, hastate at the base: lateral lobes half-ovate, with a three-lobed fleshy crest, and an elevated slanting ridge; wings of the *column* fleshy, rounded; *anther* crested.

O. Lanceanum.—*Lindl. Bot. Reg.* t. 1887.—*Hort. Trans. n. ser.*, vol. ii., t. 7.

Descr.—*Pseudo bulbs* none. *Roots* slender, flexuose, of a greenish-yellow colour. *Leaves* thick, fleshy or rather leathery, broadly oblong-lanceolate, from 12 to 18 inches long, of a light dull-green, faintly striated, and obscurely spotted with purple. *Scape* erect, terete, somewhat branched, and forming a rigid panicle copiously covered with large flowers. *Flowers*, except the labellum, of an ochre or brownish-yellow colour, copiously marked with spots of a rich chocolate; *labellum* of a bright violet, becoming gradually deeper in colour towards the base, which, together with the lateral lobes, is of a deep purple. *Sepals* obovate-oblong, the upper one somewhat vaulted. *Petals* similar in form and colour, but rather more acute; middle lobe of the lip somewhat rounded, with a narrowed and lengthened base, which, towards the columns, spreads on each side into a triangular tooth-like lobe. *Column* short, with a rounded, purple, fleshy wing on each side, and capped or terminated by a purple crested anther.

Of all the species of this handsome genus which have hitherto come under our observation, this is unquestionably the most attractive: for if in its habit it be perhaps less graceful than some others, it far excels them in beauty and richness of colour, while at the same time it exhales the most delicious fragrance. Its scent has been compared by Dr. Lindley "to the spicy odour of that sweetest of all flowers *Aerides odoratum*," of which we gave a figure and description in our last number; but in our opinion it resembles much more nearly the attar of roses.

For the specimen from which our drawing was made, we have again to make our acknowledgments to the Right Hon. the Earl of Stamford and Warrington, from whose fine collection at Enville it was forwarded to us by his Lordship's Gardener, Mr. John Beddard, whose skill in the management of orchidaceous Epiphytes is well known among amateurs and cultivators of this interesting tribe.

This remarkable plant was first introduced to this country by John Henry Lance, Esq. from Surinam, where he had resided for many years. It was originally published by Dr. Lindley in the *Horticultural Transactions*, from which work we extract Mr. Lance's account of its first discovery:—"The first specimen of this splendid Epiphyte I discovered," says Mr. Lance, "was growing on the trunk of a large *Tamarind* tree, in a noble avenue of those trees close to the Government House in Surinam. I took it home with me and planted it in a pot filled with rotten pieces of wood and a little light earth; but though it remained alive and flowered once or twice, it did not thrive but wasted away and became less. I afterwards found a great number of the plants in different parts of the colony; they were generally attached to the stems or branches of the *Tamarind*, the *Sapodilla*, or the *Calabash* trees, appearing to prefer those to any others; however, on being tied to the branches of the *Orange*, the *Soursop*, the *Mammee*, and even the *Brugmansia arborea*, it grew well upon them all, and produced vigorous stems with upwards of twenty blossoms on each stem. The scent is extremely fragrant, and is retained after the flower is dried, only becoming fainter and more of a spicy flavour than when fresh. The plant remains in full beauty ten or twelve days, a long period in that climate; and I found that it always required a shady situation, and a living stem to grow upon, without which it would not produce its flowers in the highest perfection."

The cultivation of these curious Epiphytes is, however, so much better understood than formerly, that they are now frequently grown in our stoves in as great perfection as when attached to living stems or trunks in their native forests. The present species should be potted in rough sandy peat, the pots being previously three parts filled with drainers. It also succeeds admirably suspended in a basket filled with moss (of which some of the species of *Hypnum* are the best), as practised at Mr. Barker's. It may be increased by dividing with a sharp knife, allowing a month or two to elapse before the divided portion is removed.

Fig. 1, pollen-masses; 2, anther.

OBSERVATIONS ON THE CUSTOM OF ADMINISTERING THE TANGHIN AS AN ORDEAL IN MADAGASCAR.

This frightful practice is said to have existed in Madagascar from time immemorial, and its unerring efficacy in the detection of disease had never been questioned, until Mr. Hastie, our government agent, had acquired such an influence with Radama, the late king, and his court, as to succeed, eventually, in the exposure of its fallacy. This is stated to have been the work of years, but the result was, the total abolition of the practice by Radama; we are grieved, however, to learn, that it has been revived by his successor. It would appear, from an interesting account in the Botanical Magazine, that the last occasion on which it was practised in Radama's reign, and of which he availed himself to effect its discontinuance, personally regarded his court and attendants.

The king was affected with a liver complaint, for which the "Skid" (who unites in his own person the office of priest and physician, and who administers the poisonous kernel to the victims) prescribed some inefficacious remedies; and as the disease became worse, Mr. Hastie gave him some calomel, in doses which he found by experience to relieve himself under similar symptoms. The disease disappeared, but ptyalism was produced, and alarmed the king's family, who believed that he was poisoned, and insisted that all his immediate attendants should be put to the ordeal of the Tanghin; and the royal skid was most earnest in pressing to have it performed, although he himself, from his rank and place, was among the first to whom it would be administered. In vain the king protested he felt himself cured, and that the indisposition and soreness of the mouth were caused by the medicine which had relieved him, and which would pass off in a few days. The skid insisted: the ministers and powerful chieftains joined with the family in requiring the ordeal; to which the king, in spite of his conviction, was compelled to consent; but at the same time, he made it a condition that this should be the last exhibition of the kind; and he bewailed the necessity which deprived him of so many attached attendants, whose fate he had predicted, while he protested his conviction of their innocence.

The king's servants, including the skid, were more than twenty in number; they were shut up at night separately, and not allowed to taste food; the next morning they were brought out in procession, and paraded before the assembled people; the presiding skid had the Tanghin fruit in readiness. After some prayers and superstitious evolutions he took out the kernel, which he placed on a smooth stone, and with another broke down a part of it into a soft white mass, like pounded almonds. The victims were then brought separately forward; each was questioned as to his guilt, and if he denied, his arms were tied behind, and he was placed on his knees before the skid, who put a portion of the pounded kernel on his tongue, and compelled him to swallow it. Then the kernel was shared among all the king's personal servants. On some of the individuals the action began to operate in half an hour or less. The skid takes particular notice how they fall, whether on the face, on the right or left hand, or on the back, each position indicating a different share of guilt. Convulsions generally come on, accompanied with efforts to vomit. Those whose stomachs reject the dose at an early period, usually recover; on this occasion there were only two individuals with whom this was the case; the others were thrown, in a state of insensibility, into a hole, and every person present at the ceremony was obliged to throw a stone over them, so that their burial was quickly completed. The king's skid was one of the first that fell. Those that recover are supposed to bear a charmed life ever after, and are respected as the peculiar favourites of the gods."

The following letter from the Rev. J. F. Freeman to Charles Telfair, Esq., on the subject of the Tanghen, Tanghin, or Tanghena, poison, is extracted from Sir William Jackson Hooker's Botanical Miscellany.

Port-Louis, *Mauritius*, *July* 1*st*, 1830.

MY DEAR SIR,

You are perfectly aware that the *Tanghena* has long been employed in Madagascar as a test in the *native ordeal*, to which persons suspected of witchcraft, or of being bewitched, are subjected. It has been used also to detect the guilt of persons charged more rationally with civil offences, burglary, murder, &c. It is likewise frequently employed in settling litigations as to property, petty larceny, &c., by administering it to the dogs of the parties concerned, and of course convicting the owner of the dog killed by the test, to the penalties of the law. In some parts of the island, the conviction is made to depend on the life or death of the party drinking the *Tanghena:* if the dose cause death, he is unquestionably guilty; if he live, his innocence has been demonstrated. But in Emerina, where I have resided for some time, the *Tanghena* forms an ordeal simply by its operation as a powerful emetic. Its mode of exhibition is this:—the accused person having eaten as much boiled rice as possible, swallows, *without mastication*, three pieces of the skin of a fowl, each about the size of a dollar. He is then required to drink the *test*, a small quantity scraped of the *Tanghena* nut, and mixed with the juice of *Bananas*. The "Panozondoha" (denouncer of the curse or imprecation), then placing his hand on the head of the accused, pronounces the formula of imprecation, invoking all direful curses on him if guilty. Soon after this, large quantities of rice-water are administered. The contents of the stomach are consequently ejected; and if on examination the three pieces of skin are found, all is well, the party is pronounced "Madio," clear—legally and morally innocent of the charge;—but if otherwise, guilt has fixed its stain, that stain is indelible, and the disgrace incurred is irreparable. Sometimes the corrosive nature of the poison acts with so great rapidity, that life is destroyed during the ordeal. Should the test have proved the guilt of the party, and yet the *Tanghena* itself not have produced immediate death, he is generally killed by the by-standers, a large club, spear, or the rice-pestle, being used as the murderous weapon, and the brains of the unhappy victim are dashed out on the spot. Strangling is sometimes used, as in an instance just communicated to me by an eye-witness, in which the miserable sufferer was hurried away, or dragged to a sort of burial before life was quite extinct.

In some instances the guilty are left to perish amidst their excruciating agonies—deserted by every one—family, friends, and all! Slaves, on conviction, are more generally sent to a distance, and sold where no suspicion of their guilty character is supposed to exist. But slaves belonging to any member of the Royal Family are put to death.

To every humane mind it was highly gratifying to witness the decline of such a barbarous custom during the latter years of the reign of Radama, the late enlightened and enterprising monarch of the country. His successor has, however, encouraged or permitted its revival, to a most lamentable extent—all her principal people, officers, diviners, cursers, and others, to the amount of some hundreds, have been compelled to drink the *Tanghena* within the last few months, and scores have perished, cut off in the midst of health and vigour, their property confiscated, and their families reduced to ruin and misery! Of one instance I have just heard the melancholy details from an eye-witness of the tragical scene. An aged widow, upwards of seventy, attended the administration of the ordeal to *five of her children in one day*, all grown up and having families. The first was proved innocent: the mother rejoiced almost to ecstacy! but ere the day had closed she had to mourn in anguish over three cut off out of the five, and their orphan children committed to her feeble care.

I could add more; excuse me for having trespassed thus much on your time, and forgive me in saying that, as I know you have long been the friend of Madagascar (and I know how Madagascar needs the efforts of the friends of humanity), I trust you will continue to countenance every eligible means for rescuing the five millions of inhabitants of the island from such revolting cruelties, and for elevating them to the enjoyment of the benefits of civilization and Christianity.

I am, my dear Sir, with the utmost cordiality, &c.

J. F. FREEMAN.

ON CROSSES AND HYBRID INTERMIXTURES.

WE offered some observations in our last number on the interesting subject of hybridizing, and at the same time made some extracts relative to this curious practice from the very valuable work on the *Amaryllidaceæ*, by the Hon. and Rev. W. Herbert. We are induced, in the present number, to submit to the notice of our readers some additional remarks obtained from the same source:—"With respect to the conditions, stated by Professor Rennie, as necessary to ensure success in crossing vegetables, it must be observed," says Mr. Herbert, "that the first, namely, that blossoms should be nearly in the same state of advancement, is not accurate; for in some kinds, as for instance, *Calceolaria*, that which is to bear the seed should be much less advanced than that from which the dust is taken; and in others, as in *Pelargonium* and *Alstrœmeria*, it should be much more advanced. In truth, the moment should be seized, when the stigma in the flower which is to bear the seed, and the pollen in the other, is in perfection. The second condition stated, that the anthers should be cut out early in the morning, is equally liable to objection, and cannot be applicable to all flowers, some of which blow in the morning, and others in the afternoon or evening. The necessary condition is that the anthers be removed from the flower that is to produce the seed before the dust can escape from them; for which purpose in many cases, as for instance in *Crocus*, *Erica tetralix*, and others, the flower must be opened with great difficulty at a very early stage. The plant must be then placed in a situation where no natural dust can reach it, brought either by the wind or by insects; and the pollen from another flower, which is in perfection and not beginning to wither, must be applied to the stigma as soon as it is quite developed and mature, or rather sooner. The success of such experiments is always most probable when the plant which is to be fertilized has been forced, and no natural pollen can be brought to it accidentally from other plants; and by forcing one of the intended parents, those which flower at different seasons may be made to intermix. But it should be always remembered that, except in cases where the anthers are very accessible, and not mature till after the expansion of the flower, it is almost impossible to be quite certain that no particle shall escape from them in the operation. It is incorrectly stated that we cannot cross plants which do not ripen seeds with us, for their dust may be used to fertilize one that will ripen its seed; for instance, the pollen of *Zephyranthes carinata*, which I have never known to bear seed in England, has fertilized *Z. tubispatha*. It is also very possible, if the fruit of one species is apt to perish immaturely from the unsuitableness of the climate, and the germen of another is not usually fertilized with us, in consequence of an imperfect formation of its pollen, that it may be effectually fecundated by the pollen of the other species, though neither would have borne seed separately. The deficiency of pollen is of frequent occurrence in the American *Azaleas* from the fault of our climate; but the pollen of *Sprekelia* and of *Z. carinata* is abundant, and their sterility does not arise from its defect, but from the temperature or exposure in which they are placed not being exactly adapted to the growth of their fruit."

"The first hybrid amongst our liliaceous plants that appeared in our gardens, was the mule between *Hippeastrum vittatum* and *regium*, which was circulated under the name of *Amaryllis Johnsoni;* having been raised by a nurseryman named Johnson. It was, perhaps, an accidental production, for it was offered to the public with an incorrect statement, that it had been raised by impregnating *H. vittatum* with the pollen of *Sprekelia formosissima*. He might, however, have made various trials, and have been deceived as to which of them had been successful. That statement has been since disproved by the failure of every attempt to fecundate any species of *Hippeastrum* by the pollen of *Sprekelia*, of which the separate generic character is thereby confirmed, and also by the facility with which plants exactly similar have been raised between *H. vittatum* and *regium*. The next hybrid of that order that flowered amongst us, was the *Crinum Goweni*, which was raised from seed of *C. Capense*, impregnated with the pollen of *C. Zeylanicum*, in the greenhouse of the Earl of Caernarvon, at Highclere, in 1813, by R. J. Gowen, Esq., and blossomed in my possession at Spofforth; and soon after the mules between *C. Capense* and *Caniculatum*, which had been first raised by me at Mitcham about the same time, came into flower with other crosses at Spofforth. All the hybrid *Crinums* raised between *Capense* and tropical species, which are now very numerous, are hardy enough to stand out of doors against the front wall of a stove, where, if a mat is thrown over them in sharp frosts, they preserve much of their leaves through the winter, and from May to November continue throwing up a succession of flower-stems in great perfection. *C. scabro-capense* bears the most beautiful flower; *C. pedunculato-capense* is of the largest stature.

"The genus *Calceolaria* affords greater facility than most others, because its stigma is nearly obsolete before the pollen of the flower is ready; and in the earliest stage of the bud, it is easy to lift up the corolla and take out the anthers, which are then comparatively large and exposed, and the stigma may be fertilized at that early period, when it is defended by the covering of the corolla from any accidental intrusion."

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

RANUNCULACEÆ. Juss.

Delphinium intermedium, *var.* sapphirinum. Lindl. Sapphire blue, variable larkspur. *Bot. Reg.* N. S. t. 52. This variety is perhaps superior to any hitherto figured in the intense rich blue of the flowers, having something the appearance of the colour shot, as applied in silk manufactures, in consequence of a light violet stain appearing in the middle and on the back of each sepal. The petals are of the dull black colour usual in this species.

The plant is in the collection of the London Horticultural Society, where it has long been cultivated. It is not so tall as some of the kinds, but more compact in the arrangement of its flowers, and of striking beauty. *Bot. Reg.*

SCROPHULARINEÆ.

Veronica prostrata, *var.* satureiæfolia. Roemer et Schult. Prostrate speedwell, savory-leaf variety. *Bot. Mag.* t. 3683. This is a very pretty variety of veronica. It is a native of France, Germany, Italy, and Switzerland, and blooms during the summer months. *Bot. Mag.*

SOLANEÆ. Juss.

Solanum fragrans. Hooker. Fragrant Nightshade. *Bot. Mag.* t. 3684. This species was sent from South Brazil by Mr. Tweedie to the Glasgow Botanic Garden, where, having been planted in the great stove, it soon reached a height of from twelve to fourteen feet, and flowered in the month of June. Its flowers are not showy, disposed in a secund raceme of a purplish blue colour, which is changeable; and they also emit a very powerful and agreeable fragrance. *Bot. Mag.*

Solanum Rossii. Ross's Solanum (*sp. nov.*). S. Rossii; caule fruticoso prostrato tereti gracili racemoso aculeis compressis armato: foliis binis vel ternis inæqualibus pubescentibus breviter petiolatis costis suprà aculeatis basi inæqualibus imis oblongo-sinuatis superioribus cordatis subobtusis: floribus quadrifidis tetrandris ternis longè pedicellatis, antheris æqualibus.

Descr.—*Stem* shrubby, prostrate, round, branched, the upper part clothed with fulvous pubescence, prickly throughout, prickles remarkably compressed, of a reddish-brown colour, and slightly recurved. *Leaves* two or three together, unequal in size, covered on both sides with stellate pubescence, upper surface of a dull yellowish green, with two or three prickles on the mid-rib, under surface much paler: *flowers* pendulous, two or three together, pedicels about an inch long, attached to a very short peduncle densely pubescent: *calyx* subcampanulate, pubescent, as in the peduncles and pedicels, with four short acuminate segments: *corolla* pale blue, the colour and size of S. Balbisii, externally pubescent. *Stamens* very short, with angular filaments. *Anthers* yellow, equal. *Style* longer than the stamens.

This new and pretty species of Solanum is in the collection of the Birmingham Botanical and Horticultural Society, and was raised from seeds presented to that establishment by George Barker, Esq., of Springfield, near Birmingham. The seeds were collected in Mexico, by Mr. Ross, after whom we have named it.

BIGNONIACEÆ.

Spathodea pentandra. Hook. Five-stamened Spathodea. *Bot. Mag.* t. 3681. This is a beautiful and noble tree, seeds of which were received by Mr. Murray, of the Glasgow Botanic Garden, from India. The flowers are arranged in a large corymb, and of a beautiful purple colour. It did not flower until it attained a height of nearly twenty feet. This occurred in June 1838. *Bot. Mag.*

RUBIACEÆ. Juss. GALIACEÆ. Lindl.

Crucianella stylosa. Trin. Long-styled Crucianella. *Bot. Reg.* N. S. t. 55. This is a beautiful little herbaceous plant, bearing numerous heads of bright pink flowers, which are very ornamental. It flowers during the months of June, July, and August, growing about a foot high in any good garden soil. It was found growing upon rocks among the mountains of the province of Ghilan, in Persia. *Bot. Reg.*

THYMELACEÆ. Lindl.

Daphne Australis. Ceyrill. Southern Daphne. *Bot. Reg.* N. S. t. 56. This species bears a corymb of purple flowers, which, contrasted with the dark green leaves, have a pretty appearance. It is a native near Naples, where it is not uncommon, and known to the gardeners under the above name. Its leaves are remarkably hairy, and the flowers very fragrant. *Bot. Reg.*

MONOCOTYLEDONES.

ORCHIDACEÆ TRIBE. MALAXIDEÆ.

Bolbophyllum bracteolatum. Lindl. Bracteolate Bolbophyllum. *Bot. Reg.* N. S. t. 57. This most curious little epiphyte is a native of Demerara, whence it was obtained by Messrs. Loddiges, with whom it flowered in July, 1837.

" This species, and B. setigerum, and probably some others, offer the singular instance of the existence in America of a genus hitherto discovered only in the old world. The flowers are small, and, when magnified, are seen beautifully variegated with flesh-colour, yellow, red, and violet; but what is more remarkable, there exists on each side of the flower, at the base of the petals, a small ovate bract, the rudiment of which is also met with in B. setigerum, in the form of a minute tubercle. This additional part has never before been noticed in the order, and is possibly the explanation of the true nature of the exterior series of floral organs found in Epistephium. It would therefore seem as if the ordinary condition of the flowers of Orchidaceæ were in a sort of middle state between two extremes; of which Epistephium is the most complete, and Monomeria, in which there are no petals, the most imperfect."—*Bot. Reg.*

§ EPIDENDREÆ.

Epidendrum Schomburghii. Lindl. Mr. Schomburgk's Epidendrum. *Bot. Reg.* N. S. t. 53. This truly beautiful species is a native of British Guiana, where it was discovered by Mr. Schomburgk, who sent home dried flowers, and a drawing, from which Dr. Lindley's first knowledge of the species was obtained. It has since flowered in the establishment of Messrs. Loddiges.

Dr. Lindley remarks, that in Mr. Schomburgk's drawing the leaves are marked with blood-red dots all round the margin, but in the cultivated plant they have not made their appearance. *Bot. Reg.*

VANDEÆ. LEOCHILUS ONCIDIOIDES.

Leochilus (*nov. gen.*). Perianthium connivens. Sepala lateralia basi connata. Petala conformia. Labellum columnâ continuum integerrimum. Columna nana basi alata. Gynizus subquadratus. Clinandrium marginatum rostratum. Pollinia duo globosa cavata. Anthera unilocularis. Caudicula linearis. Glandula minuta. Herba Mexicana. Pseudo bulbosa.

Pseudo bulbs ovate, bearing at the apex one or two lanceolate leaves. Scape drooping, simple, arising from the base of the pseudo bulbs, bearing many dull purplish-coloured flowers. Bracts nearly as long as the pedicel and ovarium, scarious, ovate, acute, with a strong midrib. Sepals of a dull purplish colour, lanceolate, ribbed, the lateral ones joined about half way up from the base and situate under the labellum. Petals the size of the sepals, connivent and ribbed, and marked similar to the sepals. Labellum smooth, continuous with the column, ovate, lanceolate, obtuse, marked more distinctly than the sepals and petals. Column very short, having two wings at the base. Stigma somewhat of a square form, smooth. Clinandrium surrounded with a membranaceous margin, and beaked in a similar manner to Oncidium Ornithorhyncum. Pollen-masses two, globular, hollow, situate just below the apex of a linear, obtuse caudicula. Gland minute. Anther one-celled, having exteriorly on each side two round beaked projections.

This genus is very nearly related to Oncidium, particularly to O. carinatum, from which it principally differs in having *a smooth*, not a tuberculated or crested labellum. It is a native of Mexico, and is in the collection of G. Barker, Esq., Springfield, by whom it was imported in 1837.

Trigonidium Acuminatum. (*Bateman.*) " Found in Demerara by Mr. Colley and other collectors. It is a small, though interesting species. The flowers are of a dull straw-colour externally, but are most elegantly pencilled on the inside with a rich brown. The petals in this, as in all the other species, have each a dark-coloured callosity at their apex, which is placed in such a manner near the entrance of the triangular cup which the sepals form, that the appearance of a pair of eyes peeping out is produced."—*J. B. in Bot. Reg. No.* 10, *N. S.* We had an opportunity of examining a specimen of this new species about three months ago, in the collection of John Willmore, Esq., of Oldford, and (which is a somewhat curious coincidence) we at the same time named it *T. acuminatum;* though the strikingly acuminate shape of the sepals, when compared with the other species, would naturally suggest the specific name. We would remark, however, that the thin and delicate structure of the sepals in this species (which are in fact semi-pellucid) renders "*sepala herbacea*," as part of the generic character of *Trigonidium*, inappropriate; and shows the difficulty of drawing a perfect generic character from a single species.

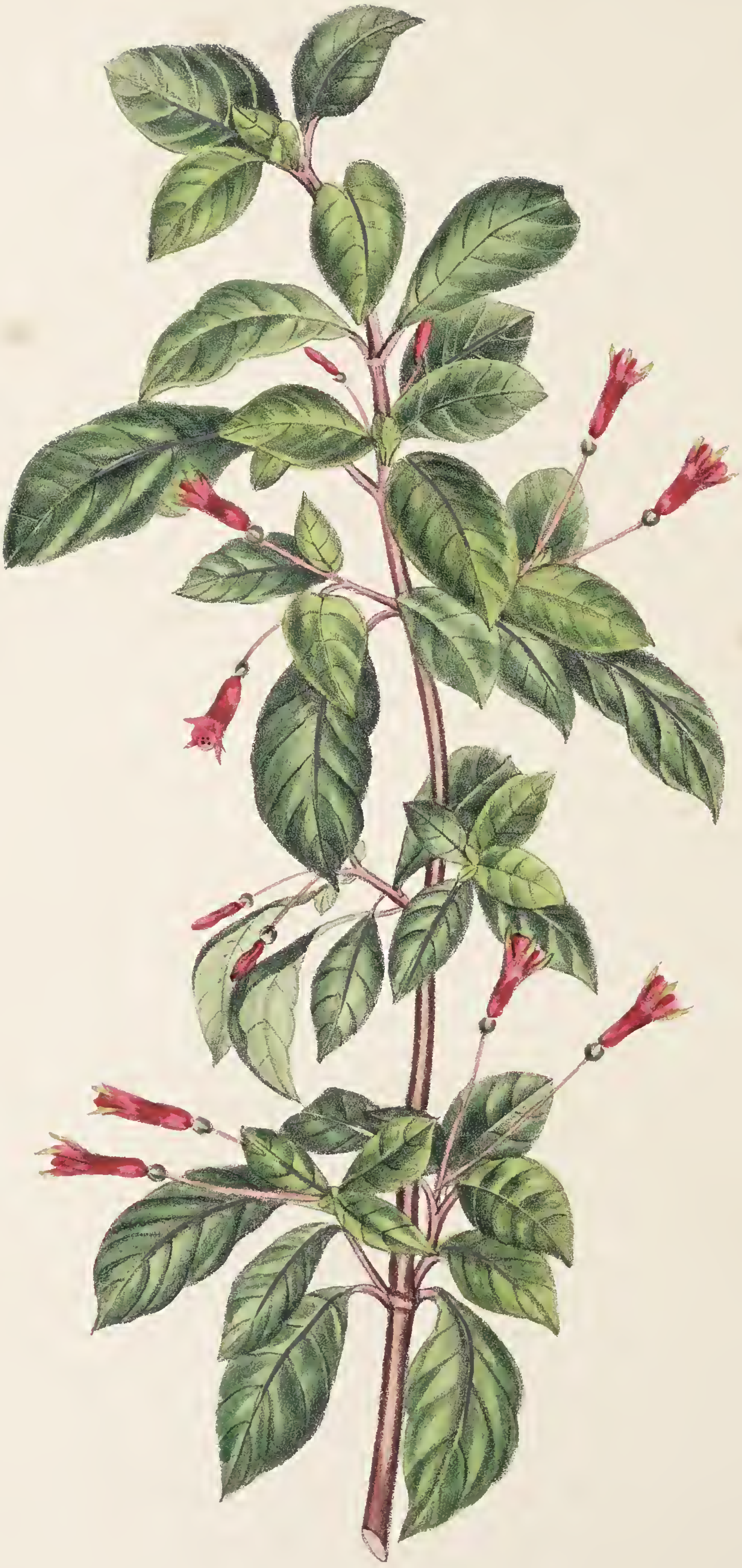
Oncidium Unicornutum. One-horned Oncidium (*sp. nov.*). O. unicornutum; pseudo bulbis oblongis compressis costatis diphyllis, foliis lineari-lanceolatis, scapo simplici gracili glauco multifloro, sepalis petalisque latè lineari-spathulatis, inferioribus in unum connatis; labelli lobis lateralibus rotundatis denticulatis, intermedio subcuneato basi unicornuto, cristâ elevatâ, transversâ, columnæ alis abbreviatis.

A new and interesting species; it is a native of the Organ Mountains, and has recently flowered in the collection of John Willmore, Esq., of Oldford.

CALENDAR OF GARDENING OPERATIONS FOR NOVEMBER.

The plant-stoves ought now to be kept to about 60 degrees by fire-heat during the night, giving air every fine day when the thermometer gets up to 65 or 70 degrees. *Steam* them every evening, and occasionally give the plants a slight watering with the syringe when the leaves of the plants are observed to be getting parched. If the red spider be in the house, they may be destroyed by putting some sulphur on the flues or pipes. Greenhouse plants are apt to damp off during this month, and should therefore be watered with great care in order to avoid wetting the leaves; at the same time, they ought to have abundance of air in fine weather. Fires must be lighted during the night if sharp frost sets in, but not more than may be sufficient to keep the frost from settling upon the inside of the glass. Ixias and other Cape bulbs must now be repotted into fresh soil. Fresh surface the other plants if necessary. The more tender of the hardy alpines will require to be placed in cold frames, giving them plenty of air by drawing off the sashes during the day in mild dry weather. The frames for protecting alpines are better placed facing the north, east, or west, but never to face the south, as the less sun they get the better. If plunged in sand in the frames, they will scarcely require any water during this month. The other alpine plants in pots out of doors may have branches of broom &c. stuck here and there amongst them, which will considerably break the winds, as well as be a slight protection from frost. Flower-beds will be better for being dug over if time can be spared, as the plants will resist the severity of the winter better with a light open surface than where the soil is firm and compact. All herbaceous plants may now be cut close down. Chrysanthemums should be protected that are in pots by being placed in pits, frames, or in the greenhouse, giving them plenty of air as long as the weather continues mild, otherwise they are apt to get drawn up and become unsightly. Those against walls may have some shelter put against them when the nights are frosty.

N.o 80.



Day & Haghe Lith.rs to the Queen

Fuchsia Cylindracea L.

F. Cameron del.

FUCHSIA CYLINDRACEA.

(*Cylindrical-flowered Fuchsia.*)

LINNEAN SYSTEM.
OCTANDRIA MONOGYNIA.

NATURAL ORDER.
ONAGRACEÆ.

GENERIC CHARACTER.

Fuchsia (Plum). *Calycis* tubus basi ovario adhærens, supernè productus in tubum cylindraceum 4-lobum post anthesin articulatìm deciduum. *Petala* 4 summo tubo inserta lobis alterna, rariùs 0. *Stamina* 8. *Ovarium* glandulâ urceolatâ coronatum. *Stylus* filiformis. *Stigma* capitatum. *Bacca* oblonga aut ovato-globosa 4-locularis 4-valvis polysperma. *Frutices*. *Folia*, sæpiùs opposita. *Pedicelli* axillares, 1-flori, interdùm ad apices ramorum racemosi. *Flores* sæpiùs nutantes, rubri rariùs albi, interdùm 5 fidi, decandri.—*Decandolle Prod.* vol. iii. p. 36.

Tube of the *calyx* adhering to the base of the ovarium, the upper part elongated into a cylindrical tube, 4-lobed, and after flowering, falling off at an articulation. *Petals* 4, inserted at the top, the tube alternate with the lobes, rarely none. *Stamens* 8. *Ovarium* crowned with an urceolate gland. *Style* filiform. *Stigma* capitate. *Berry* oblong, or ovate-globose, 4-celled, 4-valved, many-seeded. *Shrubs*. *Leaves* most frequently opposite. *Pedicels* axillary, 1-flowered, sometimes racemose at the apex of the branches. *Flowers* most frequently nodding, red, rarely white, sometimes with 5 divisions, and ten stamens.

SPECIFIC CHARACTER.

F. cylindracea; *foliis* oppositis petiolatis ovatis vel obovatis margine obsolete dentatis ciliatis; *pedicellis* axillaribus pubescentibus flore longioribus; *calycibus* petalis longioribus; *petalis* emarginatis; *ovariis* globosis sub-hirsutis; *stigmatibus* quadripartitis.

Leaves opposite, petiolate, ovate or obovate, margins obscurely toothed, ciliated; *pedicels* axillary, pubescent, longer than the flower; *calyces* longer than the petals; *petals* notched; *ovaria* round, somewhat hairy; *stigma* divided into four parts.

Fuchsia cylindracea.—*Lindl. Bot. Reg. n. s.* p. 54.—*Flor. Cab.* vol. ii. p. 94.

Descr.—*Stem* branched, slightly pubescent, two feet or more high. *Leaves* petiolate, opposite, ovate or obovate, tapering into a petiole, veined, edges recurved, obscurely notched and ciliate, obtuse or pointed, petioles pubescent. *Flowers* axillary, in pairs. *Pedicels* pubescent, longer than the peduncles of the leaves. *Calyx* tubular, divided into four parts, pubescent, longer than the petals, of an orange red colour. *Petals* four, roundish, notched at the end. *Anthers* nearly sessile, shorter than the corolla. *Style* longer than the corolla, smooth. *Stigma* divided into four distinct parts. *Ovarium* globular, somewhat pubescent, 4-celled, each cell containing two somewhat cylindrical seeds.

This species of Fuchsia bears flowers somewhat similar to those of *F. microphylla*, but their colour is a bright orange scarlet, and they are much longer in the pedicels. The leaves are something like those of *F. conica*, but its habit is decidedly different from both.

There appear to be two varieties, one of which shows no vestige of a seed-vessel when in flower, and is the prettier of the two ; in the other (our species) it is very prominent. The plants commenced flowering in July, and are still in full bloom.

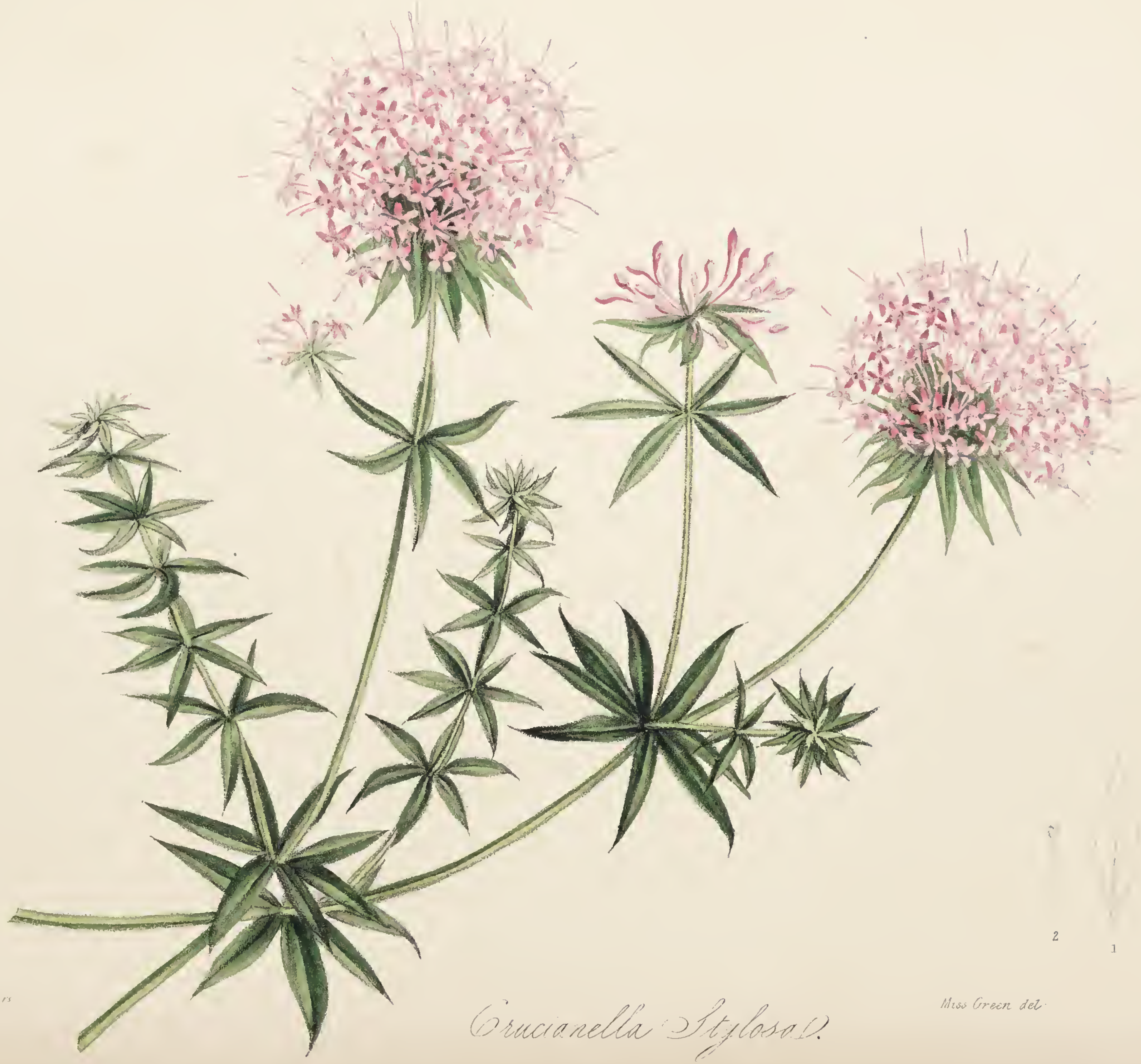
A plant turned out into the open ground has grown vigorously, and flowered freely ; it may therefore be considered to be quite as hardy as other species of the genus. It may be increased readily by cuttings of the young wood.

The seeds from which it was raised were imported from Mexico by G. Barker, Esq., of Springfield, near Birmingham, part of which were presented to the London Horticultural Society, and part to the Birmingham Horticultural Society. Our drawing was taken from a fine specimen in the latter establishment.

The generic name is after M. L. Fuchs, a celebrated German botanist.

The specific name, *Cylindracea*, has reference to the cylindrical form of the flowers.

No. 81.



Day & Haghe Lithrs

Miss Green del.

Crucianella Stylosa.

CRUCIANELLA STYLOSA.

(*Long-Styled Crucianella.*)

LINNEAN SYSTEM.	NATURAL ORDER.
TETRANDRIA MONOGYNIA.	RUBIACEÆ.—DEC. GALIACEÆ.—LINDL.

GENERIC CHARACTER.

Crucianella (Linn.) *Calycis* tubus ovatus, limbus nullus distinctus. *Corolla* tubulosa elongata infundibuliformis 4-5-loba, lobis sæpè productis in appendicem setaceam inflexam. *Stamina* 4-5 inclusa. *Antheræ* lineares. *Stylus* apice summo bilobus, corollæ tubo brevior. *Fructus* bipartibilis non coronatus, mericarpiis semiovatis oblongisve indehiscentibus. *Herbæ* interdùm imâ basi suffrutescentes. *Folia* vera opposita, stipulis filiformibus 1-3 utrinque adjectis. Florum *bracteæ* 3, nempè 1 exterior folium caulinum repræsentans, 2-laterales oppositæfolia ramusculi floridi referentes, omnes ovario longiores calyculum simulantes. *Spicæ* nunc elongatæ subcontinuæ, nunc capitatæ, nunc floribus fasciculatis pedunculatis interruptæ.—*Decandolle, Prod.*, vol. iv. p. 586.

Tube of the *Calyx* ovate, limb none distinct. *Corolla* tubulose, lengthened, funnel-shaped, four to five-lobed, lobes frequently elongated into an inflexed bristly appendage. *Stamens* four or five, concealed in the throat of the corolla. *Anthers* linear. *Style* lobed at the summit, shorter than the tube of the corolla. *Fruit* in two parts, not crowned with the calyx, each part ovate or oblong, indehiscent. Herbaceous plants sometimes suffruticose at the very base. True leaves opposite. *Stipules* filiform, from one to three added on each side. *Bracts* of the flowers three, namely one exterior representing the stem leaf, the two side ones bearing relation to the opposite leaves of the flowering branch, all longer than the ovarium, resembling a double calyx. *Spikes* sometimes elongated and sub-continuous, sometimes in heads, and sometimes interrupted with pedunculate, fasciculated flowers.

SPECIFIC CHARACTER.

C. Stylosa; procumbens; *foliis* 8-9 lanceolatis cauleque hispidis; *capitulis* terminalibus pedunculatis; *floribus* 5-meris; *stylo* clavato longissimè exserto apice brevissimè bifido.

Procumbent; *leaves* from eight to nine, lanceolate, and, together with the stem, hispid; *heads* of flowers terminal, pedunculate; *flowers* five-parted; *style* club-shaped, very longly protruding, very shortly cleft at the apex.

Crucianella stylosa. (Trin.) *Decand. Prod.*, vol. iv. p. 587. *Bot. Reg.* N. S. t. 55.

Descr. *Stem* branched, square, smoothish, procumbent. *Leaves* in a whorl of about eight lanceolate, setosely serrated, apiculate, and having the midrib bristly like the serratures. *Flowers* in dense heads, terminal. *Corolla* pink, funnel-shaped, divided into five parts, divisions acute, tube slender, half an inch long. *Stamens* four, very short, adhering to the throat of the corolla.

Anthers linear. *Style* twice as long as the corolla, very slender, smooth. *Stigma* club-shaped, papillose, divided at the apex. *Bracts* two, linear, bristly serrated. *Involucre* one, similar to the stem leaves. *Fruit* smooth ; is it divided ?

This is an exceedingly pretty hardy perennial ; bearing dense heads of pink flowers. It begins to flower in July, and continues for nearly three months ; and, from its procumbent and diffuse habit, is a most desirable plant for rock-work.

It was raised from Russian seeds, received from Mr. Hunneman in the spring of 1837.

It may easily be increased by dividing, and for culture requires no particular soil or situation. This plant is stated by Dr. Lindley, in *Bot. Reg.* (New Series, page 55), not to be a species of *Crucianella,* and in that opinion we quite agree ; in fact it does not agree, as far as we can perceive, with any of the described genera of Decandolle. It approaches nearer to the genus *Sherardia* than any other ; but, as in that genus, the fruit is crowned with the calyx, of course it will not come in there ; probably, therefore, it will form a new genus.

Anthers linear. *Style* twice as long as the corolla, very slender, smooth. *Stigma* club-shaped, papillose, divided at the apex. *Bracts* two, linear, bristly serrated. *Involucre* one, similar to the stem leaves. *Fruit* smooth; is it divided?

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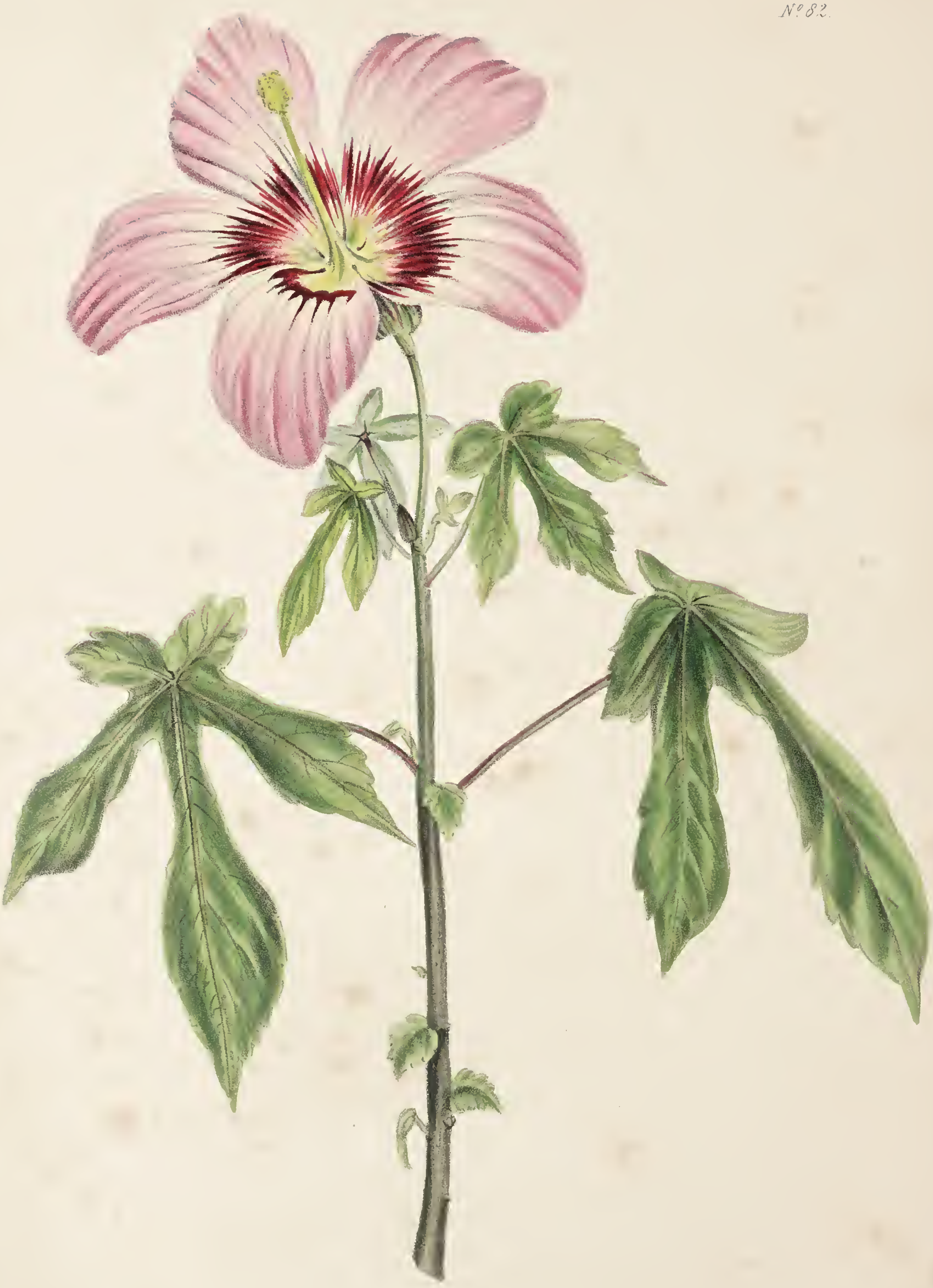
No. 82.



Day & Haghe Lith.rs to the Queen

Hibiscus Roſsii.

HIBISCUS CAMERONI.

(*Mr. Cameron's Hibiscus.*)

LINNEAN SYSTEM.	NATURAL ORDER.
MONADELPHIA POLYANDRIA.	MALVACEÆ.

GENERIC CHARACTER.

Hibiscus (Lind.) *Calyx* cinctus involucello sæpius polyphyllo, rariùs foliolis paucis aut inter se coalitis. *Petala* hinc non auriculata. *Stigmata* 5. *Carpella* in capsulam 5 locularem coalita, valvis intùs medio septiferis. *Loculis* polyspermis aut rariùs 1-spermis.—*Decandolle Prod.* vol. i. p. 446.

Calyx surrounded by a partial involucrum, most frequently many-leaved, rarely few-leaved, or joined together. *Petals* not auricled. *Stigmata* 5. *Carpels* joined into a 5-celled capsule, the valves in the interior bearing septa in the middle. *Cells* many-seeded, or rarely 1-seeded.

SPECIFIC CHARACTER.

Cameroni; fruticosus foliosus pubescens; *foliis* quinquepartitis, partibus dentatis; *petalis* ovatis obtusis marginibus undulatis; *involucellis* minutis.

Shrub leafy, pubescent; *leaves* 5-parted, parts toothed; *petals* ovate, obtuse, margin wavy; *involucellum* minute.

Descr.—Shrub; *stem* about one foot high, pubescent, and leafy. *Leaves* petiolate; in the lower part of the stem heart-shaped and notched; the upper ones 5-lobed; lobes unequal in size; the three anterior lobes lanceolate, acute, and notched; the posterior ones roundish, much smaller than the others, and bluntly notched. *Stipules* none. *Flower* solitary. *Corolla* expanded, somewhat revolute. *Petals* ovate, obtuse, having a wavy margin of a dull buff colour, tinted with rose, and strongly veined with a deep morone. Claws of the petals (forming the eye), of a bright buff, surrounded with a rich and beautifully-radiated deep morone colour. *Calyx* 5-parted, divisions acuminate. *Involucellum* about 10-leaved, minute. *Filaments* combined. *Style* 1. *Stigmas* 5, ciliated. *Seeds*?

This new species of Hibiscus belongs to the frutescent division of the sixth section (*Abelmoschus*) of Decandolle.

We have described this plant as only a foot high, and unbranched, which is the fact; but in all probability it will become much taller, and, as it increases in size, may become branched.

It was raised from seeds collected in the island of Madagascar by the British Missionaries, by them transmitted to the Rev. J. A. James of Birmingham, in the year 1837, and by that gentleman presented to the Birmingham Horticultural Society, at which establishment our description and drawing were made.

It requires to be grown in loam, peat, and sand, and appears like a plant that would increase readily by cuttings; but it is so slow in its growth, that it has not yet produced a single lateral shoot for that purpose, and will long remain a scarce plant unless it should ripen seeds.

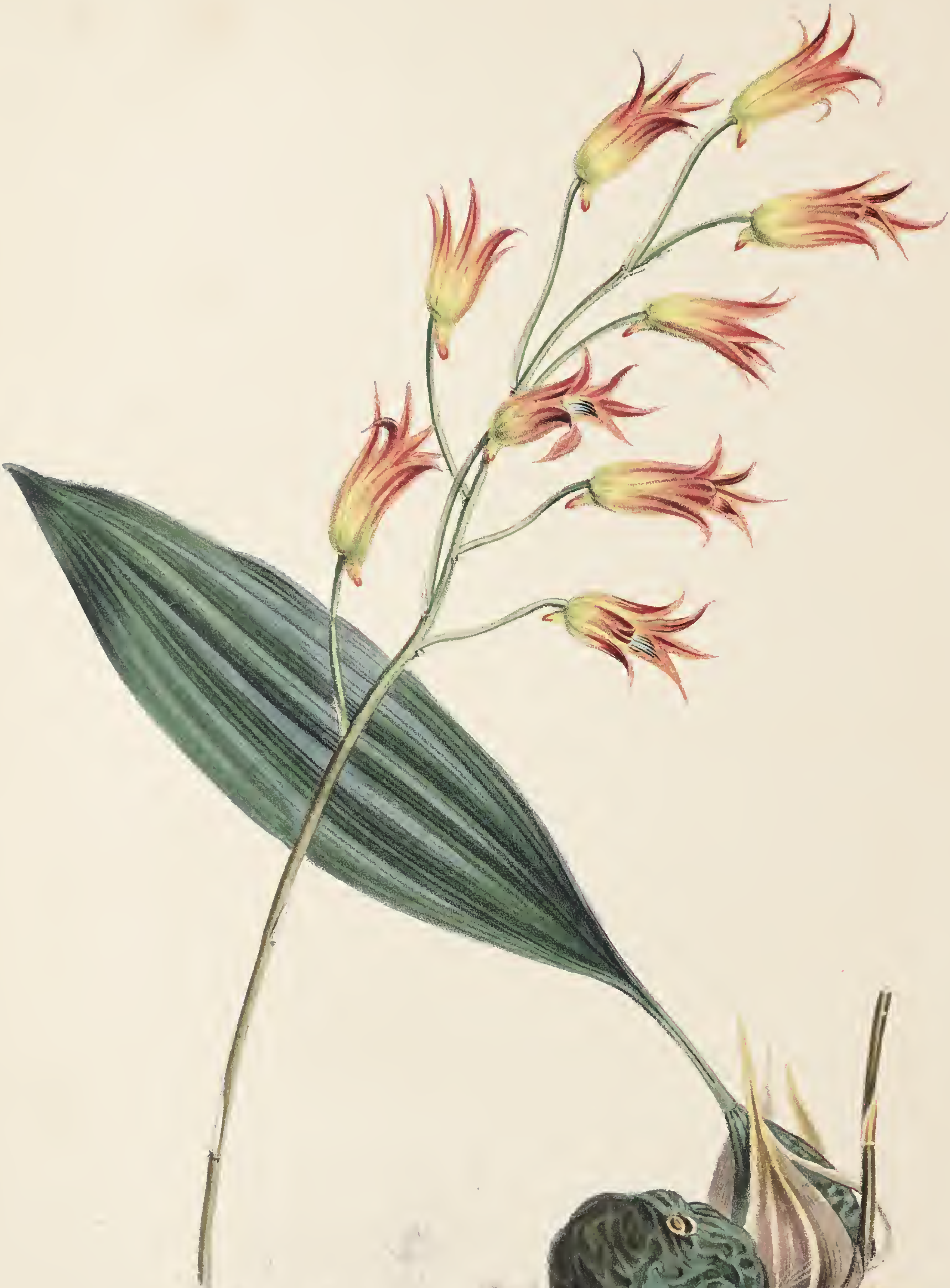
In has been stated that we are indebted for this plant to the British Missionaries, and we do not know any individuals more likely to introduce new genera and species from unexplored regions, inasmuch as they are admitted into parts from which other persons are excluded; take, for instance, New Zealand, where, protected by their sacred function, they are admitted into the tabooed land, and may traverse it without fear or danger; where, should any other person venture to intrude, death would be the certain and immediate consequence. Still, with all their advantages, little has comparatively been done by them in the introduction of new plants; we hope, however, that all who are instrumental in sending out those pious and indefatigable individuals, will urge them to exert themselves upon every opportunity to procure seeds.

They should be gathered when in a dry state, and wrapped in coarse brown paper, as by these means they will be most likely to arrive uninjured, and vegetate vigorously.

It may be added, that little or nothing is known of the vegetable productions of Western Africa, which in all probability would afford a rich harvest to an observant and active collector.

For the derivation of *Hibiscus* we beg to refer our readers to our first volume; the specific name is in compliment to Mr. David Cameron, the able and indefatigable curator of the Birmingham Horticultural Society.

No 82



Day & Haghe lithrs to the Queen.

Maxillaria Aureo-fulva.

MAXILLARIA AUREO-FULVA.

(*Golden-brown Maxillaria.*)

LINNEAN SYSTEM. NATURAL ORDER.

GYNANDRIA MONANDRIA. ORCHIDACEÆ § VANDEÆ.

GENERIC CHARACTER.

Maxillaria. (Fl. Peruv.) *Perianthium* connivens, rarò patens. *Sepala* lateralia cum basi productâ columnæ connata. *Petala* subconformia. *Labellum* trilobum, cucullatum, sessile, cum basi productâ columnæ articulatum. *Columna* semiteres, aptera. *Anthera* sub-bilocularis. *Pollinia* 2, bipartibilia vel integra, caudiculâ brevi, glandulâ transversâ.—*Epiphytæ* (Americanæ) pseudo-bulbosæ, acaules vel caulescentes. *Folia* plicata vel coriacea. *Pedunculi* radicales, axillares vel terminales, uni vel multiflori.—*Lindl. gen. et sp. orch.*

Perianth converging, rarely patent. Lateral *sepals* connate with the lengthened base of the column. *Petals* somewhat similar in form. *Lip* 3-lobed, hooded, sessile, articulated with the lengthened base of the column. *Column* semiterete, wingless. *Anther* somewhat 2-celled. *Pollen-masses* 2, each divisible into two, or entire, with a short caudicula and a transverse gland. —*Epiphytic* (American) pseudo-bulbous plants, stemless or caulescent. *Leaves* folded or leathery. *Peduncles* radical, axillary or terminal, one or many-flowered.

SPECIFIC CHARACTER.

M. aureo-fulva; pseudo-bulbis rotundato-ovatis angulatis rugosis monophyllis; *foliis* oblongo-lanceolatis costatis acutis *scapo* radicali multifloro brevioribus; *floribus* longè pedicellatis apice reflexis; *sepalis* lanceolatis acuminatis; lateralibus basi in calcar spurium productis; *petalis* striatis lineari-lanceolatis acuminatis; *labello* unguiculato trilobo in medio striato, lobis lateralibus acutis, lobo intermedio lanceolato acuminato, gynizo subrotundo margine superiore crasso.

Pseudo-bulbs roundish ovate, angled, wrinkled, 1-leaved; *leaves* oblong-lanceolate, ribbed, acute, shorter than the radical many-flowered scape; *flowers* longly pedicellate, reflexed at the apex; *sepals* lanceolate, acuminate, the lateral ones lengthened at the base into a spurious spur; *petals* striated, linear-lanceolate, acuminate; *lip* clawed, 3-lobed, striated in the middle, lateral lobes acute, middle lobe lanceolate acuminate; stigmatic cavity roundish, with a thick upper margin.

Maxillaria aureo-fulva.—*Hooker*, *Bot. Mag.* 3629.

Maxillaria stenopetala.—*Flor. Cab.*, vol. ii. p. 112.

Descr.—*Pseudo-bulbs* roundish ovate, very copiously wrinkled, invested at the base with broad, acuminate, membranous sheaths, and bearing one leaf, which terminates at the base in a longish petiole. *Scape* slender, racemose, much longer than the leaves. *Flowers* numerous, of a rich golden-brown; the *petals* and *labellum* being striped with a darker colour. *Pollen-masses* subrotund, compressed, bipartible, with two distinct caudiculæ affixed to a narrow transverse gland.

This handsome and interesting plant is in the collection of Messrs. John Pope and Sons, of Hundsworth nursery, near Birmingham. Our drawing was made some months ago, at which time we gave a brief character in the *Flor. Cab.*, and named it *M. stenopetala.* We perceived, however, immediately afterwards, that the plant had been published a short time before by Sir W. J. Hooker, under the name of *M. aureo-fulva*, which name, of course, must have the priority. As Sir William admits that he had not seen the plant, he cannot be acquainted with its peculiarity as regards its pollen-masses and caudiculæ. In the structure of its flowers, and in its general habit, it has the appearance of a Maxillaria, while the two distinct caudiculæ would seem to remove it to *Bifrenaria.* Whether the genus Bifrenaria will be retained, or whether it will ultimately form a section of Maxillaria, is a question to which, we have reason to believe, Professor Lindley is directing his attention.

The plant in question is a native of the Organ Mountains, and was found growing on the branches of trees.

The generic name, Maxillaria, was first given by the authors of the *Flora Peruviana* to certain plants of the Orchidaceous tribe, in which the labellum, when looked at sideways, resembles the maxillæ or jaws of some insects.

Fig. 1, a flower, spread open to show its structure. Fig. 2, the pollen-masses, with the two caudiculæ. Fig. 3, a horizontal section of one of the bipartible pollen-masses, the anterior being the largest. Fig. 4, the lip. Fig 5, anther case.

ON THE PROPAGATION OF FLOWERS.

It is a lucky circumstance for the admirers of fine flowers, that many of them are very easily propagated. Whether they be hothouse, greenhouse, or hardy plants, and whether trees, shrubs, or herbs, they may be all increased either by seeds, layers, cuttings, or by simple division.

Flowering plants which only live one summer, are called annuals, and are of two classes, tender, and hardy. The first are raised from seed sowed in pots or pans placed in a mild hotbed, or near the windows of a greenhouse, and when the plants are of sufficient size, are either potted for the convenience of removing them to stages, or to balconies, or window-sills, where wanted to flower. Or they may be so raised to be planted out in the open borders in May. All the hardy annuals are sown where they are intended to flower in the open ground.

Portions of both these descriptions of annual flowers should be sown twice in the season, viz. in March, and again in May ; in order to prolong the flowering as far into the autumn as possible. Greenhouse and stove plants may be also raised from seeds, when these can be procured, in the same way as are tender annuals, though the process is often more tedious.

But the most expeditious way of propagating stove and greenhouse plants, is by cuttings ; by which a great majority of them may be increased. Some skill is required in choosing the proper shoots or parts of shoots, which most readily make roots. Experience has taught us that, in propagating by cuttings, if we take those parts which are too young and succulent, they are liable to mould and damp off before new roots are formed. On the other hand, if we select pieces of the old shoots, that is, such as have been formed two or three years previous, they will but with difficulty make roots, because they have less vital energy than the shoots more recently produced. The propagator, therefore, chooses shoots of exotic plants, as well as those of all others, which are neither too young nor too old ; and this is the point on which practical skill must be exercised.

All the family of Cape heaths, and all heath-like-growing shrubs, whether African, South American, Asiatic, or Australian, may be propagated by taking points of their young shoots as soon as they have gained sufficient length and firmness, say a length of two inches, and the colour somewhat brown at the place where the cutting is separated. The cutting should be cut right across, just below a joint, if it be a jointed stem, or just below the insertion of a leaf. The cutting need not be longer than from one to two inches. One-third of the lower end is divested of leaves, and this portion of the cutting should be inserted and fixed in the soil. The shallower the cutting is inserted, the better chance it has of making active roots. There is a certain stratum of the earth on which the moisture rising from below, and the action or influences of the air meet ; and in that stratum the rooting of cuttings as well as the germination of seeds most readily take place. This stratum is generally about half an inch beneath the surface.

When a cutting is separated from its mother plant, it loses its supply of aqueous food, and immediately endeavours to generate new roots instead of those which it has lost. It contains within itself a vital principle, which is exerted in the production of both roots and shoots, provided it is placed in favourable circumstances; that is, where it is neither drenched and chilled by too much moisture, or dried up and shrunk out of form by the want of a requisite share of humidity. That a proper medium should be formed to suit the mutilated condition of the cutting while making new roots, experience has proved, that pure sand, commonly called silver sand, is the most suitable for the purpose; it retains no undue portion of moisture, nor admits too much air, especially when covered by a hand-glass, within which the cuttings are planted.

Pots (open thirty-twos) are well drained by gravel or cinders in the bottom, and filled nearly to the top with compost, and covered with about an inch of the said silver sand, all pressed pretty tightly down. The cuttings, after being prepared, are inserted in the sand, and not too closely together, and immediately watered to consolidate the whole. As soon as the surface and cuttings are dry, the glasses are put on, and the pots are plunged either in a mild hot-bed, or in some other suitable place.

Some kinds of cuttings strike soonest when placed on a little bottom heat; others require nothing of the kind, but succeed in a cold shaded frame.

When cuttings have fairly struck root, which will appear by their beginning to put forth new leaves, they should be carefully raised and placed in small pots; because they will require richer soil than the sand in which their roots have been formed. For the generality of exotic plants, whether stove or greenhouse, a suitable compost is formed of one-third turfy loam, one-third heath mould, and another third of pure white sand. This compost should be well mixed together, but by no means sifted, or broken finer than can be done with the spade; and in potting, the greatest care should be taken to drain the pots by crops and nodules of turf.

The stronger-growing sorts of Australian and Cape plants, such as Banksias, Proteas, and the like, may also be raised from cuttings, if the ripened points of the shoots be chosen and taken off at a joint, planted in sand, and covered with a striking-glass, which must be frequently wiped dry, the pots set, but not plunged, in an airy place, lest the cuttings get damp, which would ruin them.

All plants having jointed stems, whether woody or herbaceous, are easily increased by cuttings, the joints placed in soil readily emitting roots, and those in the air as quickly producing shoots.

There are a few plants which are stemless, which, if they cannot be divided, may be increased by cuttings of the roots. Indeed, there are many exotics which may be increased by cuttings of the roots that cannot be conveniently propagated in any other way.

Flowering plants are also propagated by layers. This is only had recourse to with kinds which do not readily strike roots from cuttings. Layering is a safer process; because the shoot to be rooted is not entirely separated from the parent plant; but only bent down upon and slightly covered with soil. The buried part of the shoot is *tongued*, to facilitate the emission of roots; closely, but not deeply, covered with compost, the point being kept upright. When rooted, they are independent of the old plant, and may be removed at any time.

Roses, and many other hardy plants, are usually increased by layering; that tribe of shrubs called *American* are invariably raised either from seeds or layers. Some few kinds of both stove and greenhouse plants can only be propagated by layering, or by the more scientific means of budding or grafting.

Hardy or tender herbaceous perennials are increased by cuttings, or layers of their stems, or by simple division of the roots; and all bulbous and tuberous-rooted flowers are increased by either their seeds or offsets.

Among the various tribes of exotics, whether tender or hardy, some succeed best by one mode of propagation, others by another; but they shall be the subject of another paper.

OBSERVATIONS ON THE NATURE OF SOILS.

(*Continued from page* 108.)

The soils of this country, as stated in my former paper, may be very conveniently divided into three principal classes, viz. the *siliceous* or sandy, the *aluminous* or clayey, and the *calcareous* or chalky, each of which may, of course, be modified by the presence of vegetable, animal, metallic, or other matters, and thus produce numerous varieties. I shall proceed now to offer a few remarks on some of the more important of these varieties. That different vegetables delight in different soils, is a fact that must be evident to the most common observer; and it is equally clear that we shall succeed more or less perfectly in the cultivation of plants in proportion to the degree of attention that is paid to the dictates of nature, as regards soil, climate, &c. The horticulturist is therefore frequently obliged to alter and modify his garden-soil, according to the various purposes for which it is intended. The alteration required may be either general or particular: thus, where the soil is naturally too stiff, too light, or too wet, it becomes necessary to have recourse to such operations as the peculiar nature of the soil may require for its improvement. Mr. Loudon in his "Encyclopædia of Agriculture" says, that "soils may be rendered more fit for answering the purposes of vegetation by *pulverisation*, by *consolidation*, by *exposure to the atmosphere*, by *an alteration of their constituent parts*, by *changing their condition in respect to water*, by *changing their position in respect to atmospherical influence*, and by *a change in the kinds of plants cultivated.* All these improvements are independent of the application of manure." For the most approved methods of performing these various operations, and for many excellent remarks on the advantages to be derived from them, I would beg leave to refer the reader to the admirable work above named, as containing more ample and more valuable information on the subject than any single work that has hitherto come under my notice. With these preliminary observations on the general improvement of soils, I shall proceed at once to the more particular object of this paper, which is to offer some practical hints on the different soils used by gardeners for potting plants. Here the skill of the gardener is frequently put to the test in the preparation of compost as substitutes for such native soils as are not readily to be obtained.

The different soils generally used for potting plants are,—

Loam.—This is generally procured of the best quality from commons or old pastures, taking only the top spit with the turf; that got from Sydenham Common is reckoned the best in the neighbourhood of London. To be good, it ought not naturally to crumble down too fine, but should bear to be chopped up rough with the spade.

Peat.—This is of two kinds: 1st. That which is obtained from dry elevated moors, containing a large portion of sand, and is seldom more than a few inches deep: this is termed heath-mould, and is similar to that on Bagshot Heath. 2nd. That which is termed *peat* or *bog-earth*; it differs materially from the first, and is to be found in low swamps, where it is formed of decayed *sphagnum* and other vegetable matter. This, as dug out, is worthless; but after being frequently turned and sweetened by exposure to the influence of the weather, is equally as good as the heath-mould for potting, and is far superior for mixing with common garden-soil in the borders out of doors, being even better than manure for improving some sorts of stiff soils.

Leaf-mould.—This is obtained by collecting leaves of any sorts of trees (except the resinous kinds) in autumn, and laying them together to ferment and decay. They ought to be turned and well mixed several times during the summer; and will require three or four years to get thoroughly rotted so as to be fit for use. Of all trees the leaves of the common sycamore are perhaps the best for leaf-mould, being somewhat succulent, and consequently sooner disposed to decay. Oak-leaves are reckoned best to put into pits for giving a regular bottom heat, but certainly not for leaf-mould, as they are completely dried up before they fall.

Rotted manure.—This is obtained by laying together a quantity of cow-dung, and turning it over occasionally until it be so completely rotted as to appear similar to black, rich mould.

Sand.—This may be either dug from a pit or obtained from the banks of a river; if intended for mixing with soils, it should be a coarse grit; but if wanted for striking cuttings, it should be somewhat finer, so that it may run compactly together, and thus exclude the air; it should not, however, become hard and crusted upon the surface. Sand of a whitish colour is most generally used, but the colour is of no consequence, provided it be free from any admixture of iron. Such are the principal materials commonly used by gardeners for potting plants.

Peat and *loam*, with a portion of *sand*, is used for many kinds of Cape and New Holland plants: *peat* mixed with *sand*, for the different species of *Erica*, *Epacris*, and other plants from various countries having very fine fibrous roots: when *bog-earth* is used for this purpose instead of *heath-mould*, it requires a greater quantity of *sand*. *Leaf-mould* is sometimes used as a substitute for *peat*, or is occasionally mixed with it.

Rotted dung and leaf-mould mixed with loam is used for *balsams*, *cockscombs*, *pelargoniums*, and other strong-rooted plants. In whatever proportions they are mixed, the soil ought to be chopped up with the spade, but not sifted fine, unless for plants in small pots.

Particular attention should be paid to getting all the soils well sweetened by frequent turning before they are used, and also to using them rather dry. However good the soils may be, if these points be not attended to the plants will not grow kindly. When grubs, wireworms, and other insects which are injurious to roots, are found in soils, they may be readily destroyed by spreading the soil about two inches thick upon a walk or other place with a hard bottom, in dry weather in summer, and frequently turning it until it becomes tolerably dry; as no insect that burrows in the ground can survive long after it is deprived of moisture by exposure to the heat of the sun.

Drainers are also requisite for putting into the bottoms of the pots, without which many kinds of plants cannot be grown successfully. A supply may be readily obtained by saving all broken pots and breaking them into small pieces, varying from the size of peas to that of beans, according to the size of the pots for which they are wanted.

ON THE CULTIVATION OF SEA-KALE.

BY DAVID CAMERON, A.L.S., BOTANIC GARDEN, EDGBASTON.

SEA-KALE being a vegetable of general cultivation, various methods of forcing it have been recommended and practised, with a view to obtain it in the greatest perfection. Where it is not wanted for use before the middle of February, or beginning of March, the simplest, and perhaps the best and most economical method, is by covering it with leaves. The leaves should be collected together on a dry day, as soon as they have dropped off in sufficient quantities, which is generally about the beginning of November. The sea-kale being planted in rows in one of the quarters of the garden (so as to admit of a square at least twenty feet each way being covered at once), the leaves being trimmed off, and the surface of the bed loosened with a fork, the leaves must be laid from two and a half to three feet thick all over the bed, by which means the usual method of covering the plants with pots will be rendered unnecessary. The bed will require no further care until the kale is fit to cut. The proper time for cutting will be seen by each plant, as it gets ready, pushing up the leaves over-head, like large mole-hills, thus indicating the exact part of the bed where they are ready for use, and consequently saving the trouble of seeking with uncertainty for the most forward plants, as is the case when covered with pots, and forced with dung. When forced in this way, the leaves come up perfectly erect, and in one compact stick, often two inches in diameter, perfectly clean and well blanched; while those forced with dung (particularly when the heat has been rather strong) come up slender, with the leaves spreading, so as to be obliged to be taken off singly before they can be dressed for table. Portions of the quarter may be covered at later periods, to keep up a succession until the beginning of May, when it is succeeded by asparagus, which then comes into season. If sea-kale is wanted earlier than the middle of February, it must be forced with dung in the open quarters, or taken up and forced in hotbed frames, cellars, the mushroom house, or other convenient place, where it may be got of inferior quality by Christmas; but such early forcing tends very materially to weaken the plants.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

MALVACEÆ. Br.

Pavonia Schrankii. Spr. Shrank's Pavonia. *Bot. Mag.* t. 3692. This is an extremely pretty plant, bearing crimson flowers of about an inch and a half in diameter. It was received from the Botanic Garden, Berlin, at the Edinburgh Botanic Garden in 1836, and flowered in the latter establishment in July 1837. It is said that it will not be a favourite in cultivation, because its flowers are only expanded during the forenoon. The shrub is coarse, and in no degree attractive. *Bot. Mag.*

LEGUMINOSÆ § PAPILIONACEÆ.

Hovea Manglesii. Lindl. Mr. Mangles' Hovea. *Bot. Reg.* N. S. t. 62. This is a pretty species of Hovea, bearing purplish flowers, and nearly allied to H. lanceolata, but from which it differs in the hairiness of the under side of the leaves; in Hovea lanceolata the hairs are short and straight, with a distinct glandular base; in Hovea Manglesii they are long, entangled, torulose, and scarcely at all glandular at the base.

It was raised by R. Mangles, Esq., from seeds sent from the Swan River by Captain Mangles. It is a greenhouse shrub, and should have plenty of air and light. *Bot. Reg.*

Crotalaria undulata. (*Sp. nov.*) Suffruticosa sericeo-pubescens foliis brevitèr petiolatis, ovato-lanceolatis undulatis mucronatis; stipulis subulatis petiolis longioribus decurrentibus; floribus magnis luteis; calycis segmentis superioribus inferioribus multò majoribus.

This is certainly a distinct species of crotalaria, and showy, from its large bright yellow flowers. It is allied to C. rubiginosa in structure. The seeds from which it was raised were imported from Mexico in 1837, by G. Barker, Esq., of Springfield, near Birmingham.

COMPOSITÆ.

Helichrysum macranthum. Benth. Large-flowered Helichrysum. *Bot. Reg.* N. S. t. 58. This is a beautiful species, bearing white flowers, delicately tipped with rose colour. It is a native of the Swan River Colony, and was introduced by Captain James Mangles. It is but annual. *Bot. Reg.*

Stevia fascicularis. Less. Close-headed Stevia. *Bot. Reg.* This species is more interesting to the botanist than the cultivator. It bears compact globular heads of white flowers, which are sweet-scented. It is a native of Mexico, and was raised from seeds which were imported by G. F. Dickson, Esq., and presented to the Horticultural Society. *Bot. Reg.*

Helianthus mollis. Willd. Soft-leaved Sun Flower. *Bot. Mag.* t. 3689. This species is not deserving of culture, except in a botanical garden. The true A. mollis of Willdenow seems to be in some doubt. Sir W. J. Hooker states that it is free from hairs, whilst Decandolle, in the first volume of his Compositæ, asserts that the involucrum is ciliated with long hairs, and that the leaves are rough above, and pubescent underneath.

CACTEÆ.

Melocactus depressus. Hooker. Depressed Melocactus. This species was collected by Mr. Gardner in the vicinity of Pernambuco, and from whence a number of species were sent to Woburn Abbey, and to the Glasgow Botanic Garden. The flowers are at present not known, but probably they are like the other species, small and red. After their arrival, copious seed-vessels were produced, of a delicate rose colour, which rising in a circle, considerably above the crown of red aculei, present an appearance perhaps more striking than the flowers. *Bot. Mag.*

ALANGIACEÆ.

Marlea begonifolia. Roxb. Begonia-leaved Marlea. *Bot. Reg.* N. S. t. 61. This is a small tree, the flowers of which possess no great beauty. It is a native of Sylhet, and the timber is employed by the natives in the construction of their houses. It flowers in April, and ripens its fruit in July, according to Dr. Roxburgh.

MONOCOTYLEDONES.

MELANTHACEÆ.

Merendera caucasica. Beib. Caucasian Merendera. *Bot. Mag.* t. 3090. This is a delicate little plant, a native of Caucasus, in Middle Iberia, where it blossoms very early in the spring. It was sent to the Glasgow Botanic Garden by Dr. Fischer, and flowered in that establishment, under the shelter of a glass frame, early in May. The colour of its flowers is similar to those of the Colchicum, of which this was formerly a species. *Bot. Mag.*

COMMELINACEÆ.

Tradescantia spicata. (*Sp. nov.*) Foliis alternis lanceolatis acuminatis, vaginis ciliatis; floribus spicatis axillaribus glomeratis; petalis ovatis, obtusis, calycibus pedicellisque villosis.

Descr.—Perennial; stem about two feet high, smooth, enlarged at the joints. Leaves alternate, lanceolate, acuminate, sheathing; sheaths ciliate. Flowers axillary, numerous, 12—15, arranged in a spike, situate within the sheaths of the leaves, from which cause the sheaths have a large gibbose appearance. Sepals three, much smaller than the petals, covered with villose hairs, the edges scarious, obtuse. Petals three times as large as the sepals, smooth, obtuse. Pedicels about an inch long, villous. Stamens six, situate around the base of the ovarium, covered with purple articulated hairs. Anthers yellow, shorter than the style. Style smooth. Stigma obsoletely lobed. Ovarium densely covered with soft villous white hairs, angular, three-celled and three-valved. Seeds one in each cell, globular, smooth.

This new species is a native of Mexico, from whence seeds were transmitted to G. Barker, Esq., of Springfield, in whose collection it is. It belongs to the second section of Schulte's "Systema Vegetabilium," and should be placed next to *T. speciosa*. It is planted in the open ground, where it flowered; but it no doubt requires greenhouse protection.

ORCHIDACEÆ § MALAXIDEÆ.

Paxtonia rosea. Lindl. Pink Paxtonia. *Bot. Reg.* N. S. t. 60. This is a delicate and pretty as well as a curious plant, collected by Mr. Hugh Cuming in the Philippine Islands, and imported by Messrs. Loddiges, in whose collection it is. It is very different from all genera hitherto discovered, in having the lip so similar to the sepals and petals that it is only to be known by its position. *Bot. Reg.*

§ VANDEÆ.

Catasetum atratum. Lindl. Dark-flowered Catasetum. *Bot. Reg.* N. S. t. 63. This very distinct species was imported by Messrs. Loddiges, from Brazil. The flowers are gracefully drooping, and are amongst the handsomest of the genus. *Bot. Reg.*

CALENDAR OF GARDENING OPERATIONS FOR DECEMBER.

The plant-stove ought to be kept at a temperature of 55 to 60 degrees during the night, and air ought to be given during the day, whenever the temperature rises eight or ten degrees higher; but care must be taken not to give air when there is a cold piercing wind.

Syringe the plants twice or three times a week, and steam the house in the evening by pouring water upon the flues, or hot-water pipes.

The greenhouse must have plenty of air every fine day. No fires should be lighted except in frosty weather, and then only enough to keep the frost off the glass; more injury is done to greenhouse plants by too much fire, than by too little.

Heaths and hard-wooded Cape and New Holland plants, will endure a little frost without injury; whilst Pelargoniums and soft-wooded plants suffer immediately after they get frozen.

Give plenty of air to plants in cold pits and frames in mild weather, by drawing the sashes entirely off. Cover with mats during the frost.

Potted plants for forcing, such as Roses, Persian Lilacs, Rhododendrons, Kalmias, Lily of the Valley, and Hyacinths, should be first placed in the greenhouse for a week or more, before being finally removed to the stove, otherwise the transition will be too great.

Strawberry pots ought likewise to remain for a few days in the greenhouse previous to forcing.

The forcing of early Grapes and Peaches may commence this month; also the forcing of Sea Kale, Radishes, &c.

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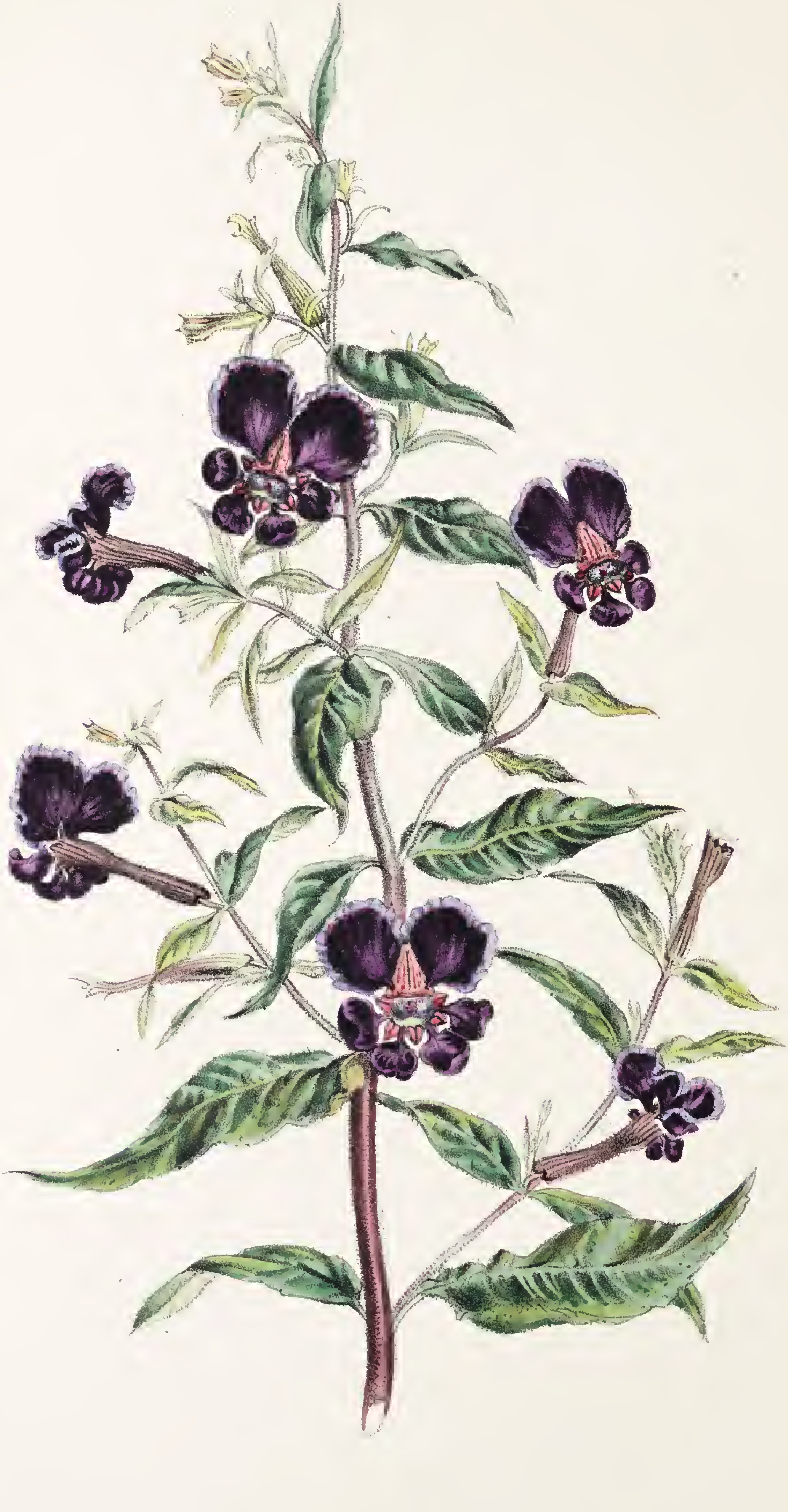

Cuphea Lanceolata ?

Day & Haghe Lithrs to the Queen

CUPHEA LANCEOLATA.

(Lance-leaved Cuphea.)

LINNEAN SYSTEM.
DODECANDRIA MONOGYNIA.

NATURAL ORDER.
LYTHRACEÆ.

GENERIC CHARACTER.

Cuphea (Jacq.) *Calyx* tubulosus basi superiore gibbus limbo ampliatus, dentibus 6-erectis, sinubus 6 nunc productis parvis nunc obsoletis. *Petala* 6-7 inæqualia. *Stamina* 11-14, rariùs 6-7 *fauci calycis* inserta inæqualia. *Glandula* crassa sub ovario. *Stylus* filiformis. *Stigma* simplex aut subbifidum. *Capsula* membranacea calyce obtecta 1-2 locularis, demum per placentam deflexam simul cum calyce fissa. *Semina* suborbiculata compressa aptera. Herbæ aut suffrutices. *Folia* opposita rariùs verticillata integerrima. *Pedunculi* interpetiolares uni aut rariùs multiflori. *Flores* sæpiùs cernui. *Calyces* colorati. *Petala* violacea aut alba.—*Decandolle Prod.* vol. iii. p. 83.

Calyx tubulose, the upper part at the base gibbous, enlarged at the limb, teeth 6, erect, sinuses 6, sometimes elongated, small, sometimes obsolete. *Petals* 6 or 7, unequal. *Stamens* 11 to 14, rarely 6 to 7, inserted in the throat of the calyx, unequal. *Gland* thick under the ovarium. *Style* filiform. *Stigma* simple, or somewhat bifid. *Capsule* membranaceous, covered with the calyx, 1 to 2-celled, at length dividing, together with the calyx, through a deflexed placenta. *Seeds* somewhat orbiculate, compressed, wingless. Herbaceous or suffruticose plants. *Leaves* opposite, rarely verticillate, entire. *Peduncles* between the petiole and the stem, one, or more rarely many-flowered. *Flowers* oftentimes drooping. *Calyces* coloured. *Petals* violet-coloured or white.

SPECIFIC CHARACTER.

C. lanceolata; villosa viscosissima; *caule* herbacea; *foliis* oppositis breviter petiolatis, ovato-lanceolatis sub acuminatis, obsoletè dentatis; *floribus* pedicellatis solitariis cernuis; *calycibus* 6-dentatis; *petalis* 6 obovatis, superioribus 2 maximis; *staminibus* 2 longioribus, ultrà antheram lanatis.

Villous, very clammy; *stem* herbaceous; *leaves* opposite, shortly petiolate, ovate, lanceolate, somewhat acuminate, obsoletely-toothed; *flowers* pedicellate, solitary, drooping; *calyx* 6-toothed; *petals* 6, obovate, the two upper ones the largest, two *stamens* longer than the rest, woolly beyond the anther.

Cuphea lanceolata.—(*Ait.*)—*Brit. Flor. Gard.* t. 402.

Descr. Annual. *Stem* branched, about two feet high, covered all over with glandular hairs, from which exudes a viscid resinous balsamic secretion. *Leaves* on very short petioles, opposite, ovate, lanceolate, covered with a soft villous pubescence, tapering to the apex; the lower leaves obscurely-toothed, the upper ones entire. *Flowers* pedunculate, solitary. *Petals* six, very unequal in size, the two uppermost five times as large as the lower ones, unguiculate, of a beautiful purple violet colour, elegantly bordered with violet of paler tint. Margin of the upper petals undulate, the apex of the lower petals incurved. *Calyx* very viscous, longly tubular, gibbous on the upper side, contracted in the throat; unequally divided into six parts, the upper sepal five times as large as the lower ones, and after flowering, beaked; the lower sepals are angular, and in the interior of the divisions are six little appendages, to which the name sinuses has been given; exteriorly between the divisions are small tufts of whitish hairs. *Stamens* eleven, unequal. *Filaments* villous beneath the anther. *Anther* 2-celled, white, bursting lengthwise, articulated to the filament with a thick connectivum. *Ovarium* oblong, cylindrical. *Style* subulate, shorter than the stamens, incurved at the apex. *Stigma* small, capitate. *Seeds* orbicular, compressed, brownish.

For the opportunity of figuring this showy species of *Cuphea* we are indebted to Messrs. Osborn and Sons, of the Fulham nursery, who received it from Messrs. Booth, of the Hotbeck nurseries, Hamburgh. It is a native of Mexico, and was introduced by Mr. Anderson, the worthy curator of the Apothecaries' Garden, Chelsea, about the year 1796, since which time it has been for a long time lost to the gardens of this country. In its treatment as a hardy annual, it requires no particular care or soil. The seeds should be sown in April, when plants will flower in August. As the seeds, however, do not ripen readily in autumn, it would be advisable to sow a few of them in pots, in the month of March, for turning into the open border; by this means you will ensure ripe seeds being obtained, otherwise the plant is likely to be again lost to the gardens. The genus *Cuphea* is extensive, containing about 40 species, and may be said to be almost exclusively Mexican.

The generic name is from Κυφος, curved, supposed to allude to the curved tube of the calyx; the specific name, lanceolate, from the shape of the leaves.

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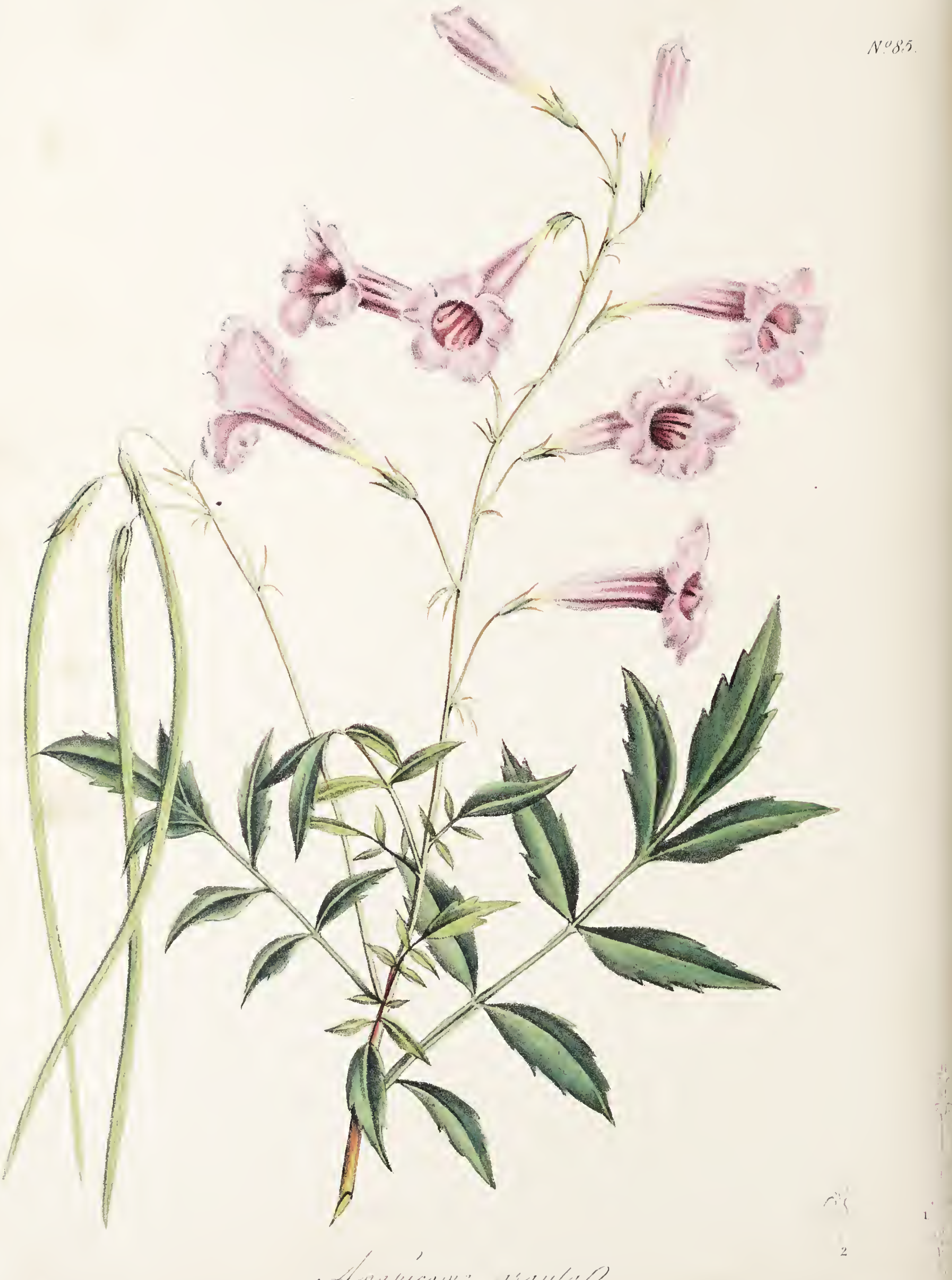


Mrs Withers del. *Amphicome arguta* Day & Haghe Lithrs to the Queen

AMPHICOME ARGUTA.

(*Finely-cut Amphicome.*)

LINNEAN SYSTEM.
DIDYNAMIA ANGIOSPERMIA.

NATURAL ORDER.
BIGNONIACEÆ.

GENERIC CHARACTER.

Amphicome (Royle.) *Calyx* campanulatus, 5-dentatus; sinubus nudis. *Corolla* infundibularis; limbo quinquelobo bilabiato: laciniis subæqualibus. *Stamina* didynama; *antheris* per pares stylo arctè appressis, connectivo appendiculato lobisque aristatis: Rudimentum staminis quinti subulatum. *Discus* hypogynus cyathiformis. *Ovarium* 1-loculare, placentis 2 linearibus parietalibus polyspermis; *stigma* bilamellatum. *Capsula* siliquiformis suturâ alterâ dehiscens; dissepimento libero. *Semina* appensa, utrinque pilis distinctis comosa.—Herbæ *terrestres Himalenses*, *foliis pinnatis*.

Calyx campanulate, 5-toothed; sinuses naked. *Corolla* funnel-shaped; limb 5-lobed, bilabiate; divisions somewhat equal. *Stamens* didynamous; *anthers* closely appressed to the style by pairs, with an appendiculate connectivum and awned lobes. Rudiment of the fifth stamen awl-shaped: *Disc* hypogynous, cup-shaped. *Ovarium* 1-celled, with 2 linear, parietal, many-seeded placentæ; *stigma* bilamellate. *Capsule* siliquiform, opening by one suture; dissepiment free. *Seeds* appense, comose on both sides with distinct hairs.—Plants *terrestrial*, *Himalayan*, with *pinnate leaves*.

SPECIFIC CHARACTER.

A. arguta; *foliis caulinis* bijugis, *foliolis* sessilibus ovato-lanceolatis parcè et grossè serratis, terminali sæpius trilobo, *calycis* laciniis subulatis.

Stem-leaves bearing two pairs of leaflets, *leaflets* sessile, ovate-lanceolate, sparingly and coarsely serrated, the terminal one more frequently 3-lobed, divisions of the *calyx* awl-shaped.

A. arguta. *Lindley in Bot. Reg. N. S.* fol. 19.

A. arguta. *Royle, Illustr. t.* 72.

Incarvillea arguta. Id. p. 296.

Descr.—A *perennial* plant with a subterraneous, rooting stem, which puts forth branches about two feet high. *Leaves* pinnate, of a dark green colour, smooth; *leaflets* ovate-lanceolate, acuminate, sessile, irregularly and coarsely serrated, the terminal one more frequently 3-lobed: the *stem-leaves* with *two* pairs, the *lower ones* with *four* pairs of leaflets. *Racemes* terminal, occasionally, but not regularly secund; *flowers* distant, somewhat nodding; *peduncles* long, slender, each with one or two subulate bractes at the base. *Calyx* bell-shaped, 5-toothed, slightly ciliated; divisions acute. *Corolla* perfectly glabrous, of a long funnel-shape, and a pale rose-colour; divisions of the upper lip short and abrupt, the lower ones rounded. *Anthers* hairy, awned beneath the apex; the connectivum terminating in a somewhat ovate appendage, and bearing an awn or little horn-like projection similar to those on the lobes. *Ovarium* linear.

1-celled; style the length of the stamens, embraced by the anthers. *Capsule* slender, smooth, resembling a long silique, 1-celled, many-seeded, opening by one suture only. *Seeds* numerous, appense, compressed, the testa terminating at each end in numerous delicate hairs, the structure of which, when examined under the microscope, is highly curious.

This rare plant flowered for the first time in this country, in August 1837, at the garden of the London Horticultural Society, where it was raised from seeds sent to that establishment by Professor Royle. The seeds were collected on the Himalaya mountains at an elevation of from 6000 to 8000 feet. The flowers are beautiful and gracefully disposed, and it is altogether a very elegant plant. It is supposed to be hardy enough for the open air, if planted in a favourable situation, and protected from frost in winter. To cultivate it with success, a considerable degree of care and attention will be necessary. On this point we copy the following important remarks from the *Botanical Register*:—"It is very impatient of wet, even in summer, and requires to be kept particularly dry during winter; it thrives best in a loamy soil, with a small portion of sandy peat added, and may be increased by seeds or cuttings. The seeds should be sown about February, in a loamy soil, and placed in the greenhouse. The plants grow slowly, and will not flower before the second year. Cuttings of the young shoots strike any time from March to September, but rather slowly. They will continue flowering from June to September; the same flowers remain for some days in perfection; they are destitute of scent."

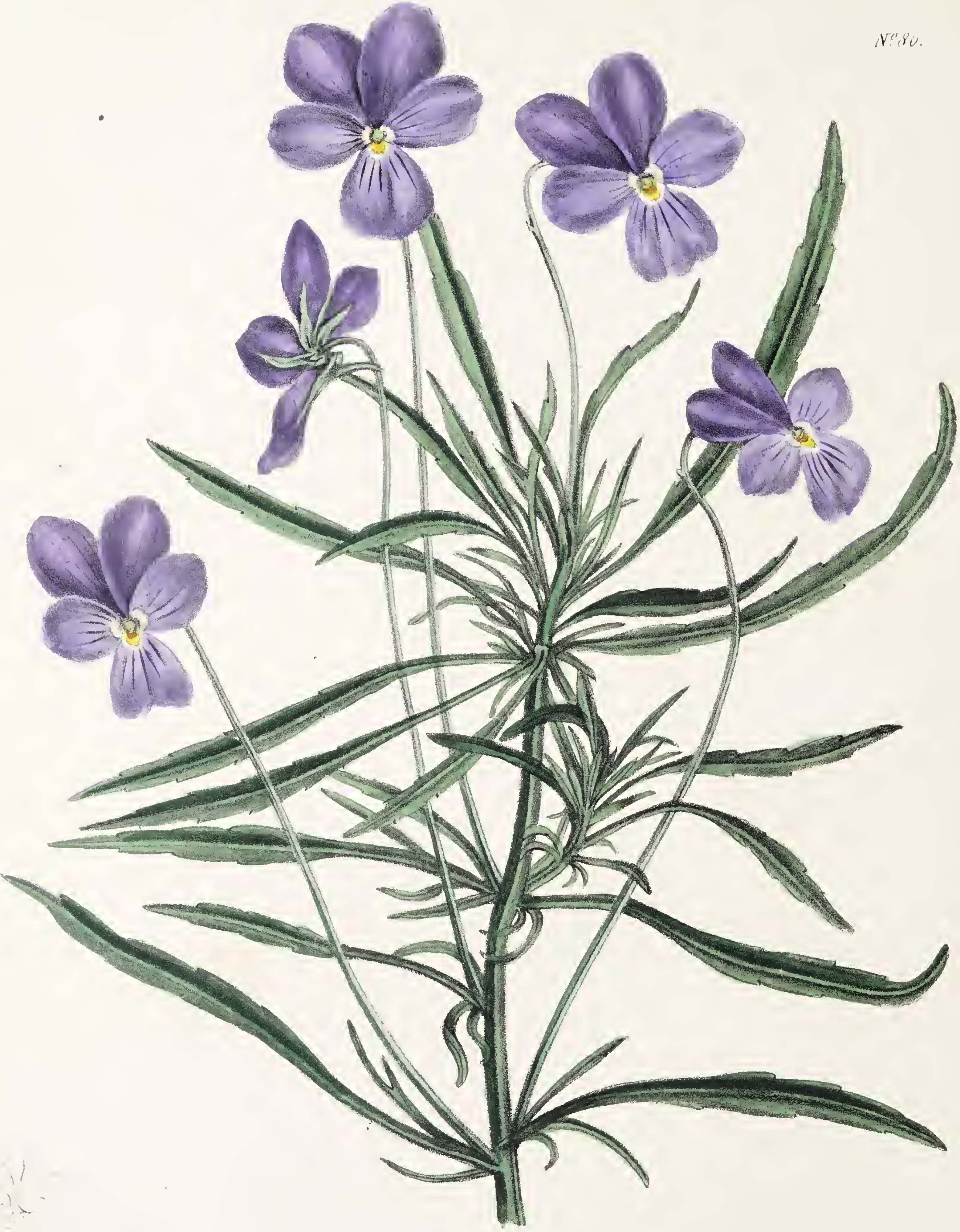
Another species of this interesting genus is known under the name of *Amphicome Emodi*, but has not as yet been seen in this country. It is said to be a much finer plant, with larger and more numerous flowers. We shall be anxious to hear of its introduction.

The species which we now figure was published in the *Bot. Reg.* of April last, accompanied with a very minute and most accurate description of its botanical peculiarities by Dr. Lindley, who remarks that Dr. Royle has abandoned his name *Amphicome*, in conformity with the opinion of Dr. Brown, who considers the genus not distinct from *Incarvillea*. Dr. Lindley, however, is disposed to believe "that the characters assigned to *Amphicome* as a subgenus, are quite sufficient for a higher purpose, in an order the distinctive characters of which are such as those of *dicarpous Monopetalæ;*" for which reason he has restored the name.

Amphicome is derived from αμφι around, and κομη hair, in reference to the hairy appendages to the seeds.

Fig. 1, the calyx with a part of the tubular portion of the corolla, the upper portion being removed to show the style embraced by the anthers. Fig. 2, an anther, showing the awn on each lobe, and a similar one on the ovate appendage of the connectivum.

No. 80.



Viola Palmaensis.

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Day & Haghe Lithrs to the Queen

VIOLA PALMAENSIS.

(*Palmese Violet.*)

LINNEAN SYSTEM. NATURAL ORDER.

PENTANDRIA MONOGYNIA. VIOLACEÆ.

GENERIC CHARACTER.

Viola (Tourn.) *Calycis* sepala inæqualia, omnia plus minùs deorsùm in appendices auriculæformes, (e dilationibus nervorum prodeuntes producta), post anthesin erecta. *Petala* inæqualia, æstivatione convolutivâ ungue trinervi; inferius deorsûm in calcar cavum plus minus productum. *Stamina* approximata aut coarctata (nec coalita) ad apicem dentium tori pentagoni 5 dentati inserta. *Filamenta* basi dilatata oblonga vel triangularia, antheras demissiùs gerentia; lobi antherarum basi divergentes; stamina 2 anteriora dorso appendices varias nectariferas in calcar intrantes gerentia. *Ovarium* nunc superum, nunc basi toro concavo cinctum et ideò semi-inferum. *Valvulæ* capsulæ elasticæ post maturationem contractæ semina ejicientes; semina horizontalia manifestè carunculata, plus minus ovoidea et nitida. *Embryo* oblongus, radicula teretiuscula, cotyledones sæpiùs oblongo-orbiculatæ planiusculæ radiculâ vix longiores. *Herbæ* plerumque perennes, rarissimè annuæ nunc caule brevissimo vel subterraneo, unde acaules dictæ, nunc caulescentes vel suffrutices parvi; folia alterna inarcescentia; pedunculi solitarii axillares uniflori, 2 bracteolati non articulati, apice reflexi; flores cernui; folia seminalia oblonga ovatave petiolata; primordialia opposita, sed raró coëtanea.—*De Cand. Prod.* vol. ii. p. 291.

Sepals of the *Calyx* unequal, all more or less produced downwards into auricular appendages, (arising from the dilatation of the nerves,) after flowering erect. *Petals* unequal, æstivation convolute, claw three-nerved, lower petals downwards elongated more or less into a hollow spur. *Stamens* approximating or pressed together, not joined, inserted at the apex of the teeth of a five-sided five-toothed torus. *Filaments* oblong or triangular, dilated at the base, bearing the anthers low, lobes of the anthers diverging at the base, the two anterior stamens bearing at the back various nectariferous appendages passing into a spur. *Ovarium* sometimes superior, sometimes surrounded at the base with a concave torus, and then half inferior. *Valves* of the capsule elastic, contracted after maturity, ejecting the seeds, seeds horizontal, manifestly fleshy, more or less ovoid, and shining. *Embryo* oblong, radicle roundish, colytedons oftentimes oblong orbiculate, flat, scarcely longer than the radicle. *Herbaceous* plants most commonly perennial, very rarely annual, sometimes with a very short or subterraneous stem, whence called stemless, sometimes caulescent, or small shrubs. *Leaves* alternate, withering, peduncles solitary, axillary one-flowered, bracts two, not articulated, reflexed at the apex, flowers drooping, seed-leaves oblong or ovate petiolate, first leaves opposite but rarely joined.

SPECIFIC CHARACTER.

V. palmaesis; suffruticosa ramosa, pubescens; *foliis* lineari-lanceolatis remotè dentatis: *stipulis* laciniatis foliis ferè æquantibus, laciniis propè basin obsoletè dentatis: sepalis lineari-lanceolatis ciliatis, calcare incurvo; petalis obovatis, superioribus subemarginatis, lateralibus basi barbatis; ovario angulato.

Somewhat shrubby, branched, pubescent; *leaves* linear-lanceolate remotely toothed; *stipules* laciniated, almost the length of the leaf, jagged divisions obscurely toothed near the base; sepals linear-lanceolate, ciliated, spur incurved, petals obovate, the upper ones subemarginate, the lateral ones bearded at the base; ovary angular.

Descr.—Suffruticose, about a foot high, branched, pubescent. Leaves linear-lanceolate, dentate, tapering into a long petiole. Stipules nearly the length of the leaf, jagged divisions toothed near the base. Scape smooth, nearly twice the length of the leaves. Bracts two, scarious, situate about an inch below the flowers. Calyx five-parted, divisions linear-lanceolate, acute, ciliate, more or less notched at the base. Flowers nodding, of a purplish-blue colour. Petals obovate, the lower one somewhat cuneate, yellow at the base, and bearded. Anthers five, shorter than the style, tipped at the apex with brown. Style linear. Stigma capitate, bearded, more or less hollow in the centre. Ovarium obscurely angled. Seeds numerous.

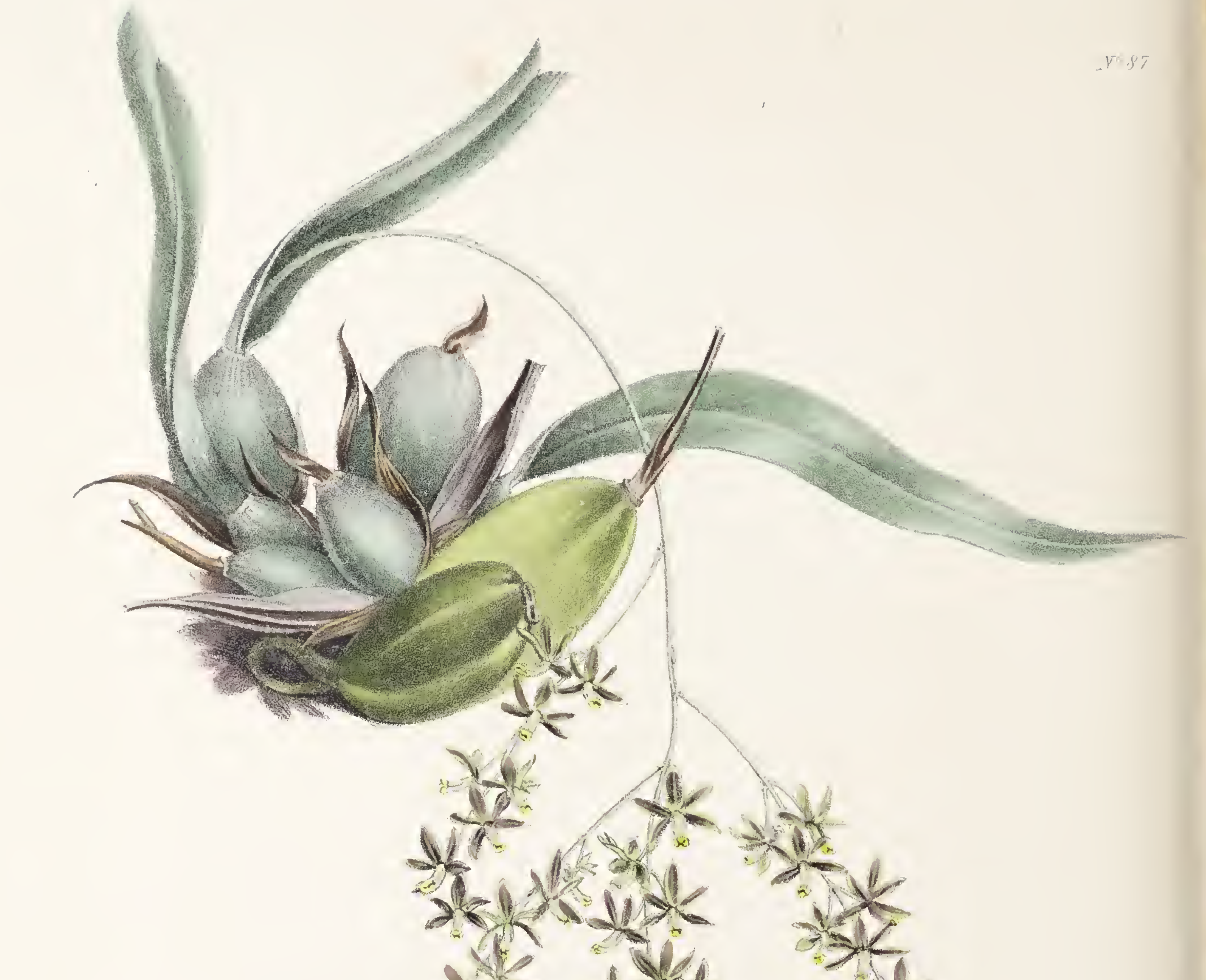
This distinct suffruticose species of Viola was received from Mr. Makoy, of Liege, at the Birmingham Botanic Garden, in the year 1837. It is probably quite hardy, a small weak plant having stood the severity of last winter in a cold frame without the slightest injury. Plants in the open ground of the above establishment, in the middle of this present month (December), have not as yet a single leaf injured. It is well worthy of cultivation, as it flowers freely from July to November. It will grow in any common garden soil, and may be increased by cuttings of the tenderest young shoots, which should be placed in a little heat.

Plants composing this genus are to be found both in the North and South temperate zone, but by far the greater number in the Northern department. Their distribution is pretty nearly as follows:—forty-eight to America, thirty-five to Europe, three to Africa, ten to Asia, two to Australia, and two whose country is doubtful.

The violet tribe, which comprises about eighteen genera, has been known, from a very early period, to possess important medicinal virtues. The roots of all plants of this order are more or less emetic; but this property is less powerfully developed in the European than in the South American species. Several of these are used as substitutes for ipecacuanha. Our common wild scentless violet has the reputation of being exceedingly efficacious in the cure of some cutaneous affections, and is probably worthy of a more frequent trial than it has hitherto received in this country.

The dissection in the plate shows a flower with the petals removed; *a.* the globular stigma with its aperture; *b.* the seed-vessel.

No. 87



Epithecia Glauca.

M[illegible] del.

Day & Haghe Lithrs to the Queen

EPITHECIA GLAUCA.

(*Glaucous Epithecia.*)

LINNEAN SYSTEM.	NATURAL ORDER.
GYNANDRIA MONANDRIA.	ORCHIDACEÆ § EPIDENDREÆ.

GENERIC CHARACTER.

Epithecia. *Perianthium* patens. *Sepala* libera, æqualia. *Petala* libera, æqualia, sepalis triplò minora. *Labellum* lineare, columnâ continuum parallelumque, carnosum, apice trilobum. *Columna* nana, curvata, basi cavata. *Gynizus* semirotundus. *Anthera* subdorsalis, 4-locularis. *Pollinia* 4. *Caudiculæ* 4. *Clinandrium* integerrimum, basi apiculatum, infrà appendiculatum. *Pseudobulbus* ovato-orbicularis, compressus. *Folia* lanceolata. *Scapus* terminalis, gracilis, ramosus. *Flores* racemosi. Herba *Mexicana.*

Perianth open. *Sepals* free, equal. *Petals* free, equal, three times smaller than the sepals. *Labellum* linear, continuous and parallel with the column, fleshy, three-lobed at the apex. *Column* dwarf, curved, hollow at the base. *Stigmatic cavity* half-round. *Anther* somewhat dorsal, 4-celled. *Pollen-masses* 4. *Caudiculæ* 4. *Clinandrium* very entire, apiculate at the base, with an appendage below. *Pseudobulb* ovato-orbicular, compressed. *Leaves* lanceolate. *Scape* terminal, slender, branched. *Flowers* racemose. A *Mexican* plant.

Prosthechea glauca.—*Flor. Cab.* vol. ii. p. 111.

Descr.—*Pseudobulbs* 1-leaved, of a roundish oval, compressed. *Leaves* lanceolate, deeply sheathed at the base, of a parchment-like texture. *Scape* slender, about a foot long, drooping, branched. *Flowers* spreading after the manner of an *Epidendrum,* pedunculate, disposed in racemes, pointing one way. *Sepals* ovate, acute, of a purplish colour, tipped with greenish-yellow. *Petals* about one-third of the size of the sepals, lanceolate, acute, and similar to them in colour. *Labellum* linear-lanceolate, parallel and pressed to the column, fleshy, more especially at the apex, which is divided into three unequal lobes ; the central lobe broad, the lateral lobes longer, narrower, and approaching, with a fleshy angular appendage at the back. *Bracteas* lanceolate, acute. *Column* curved, angular, hollow at the base. *Gynizus* half-round, or somewhat crescent-shaped, the sides of which are streaked with purple. *Pollen-masses* 4, somewhat pear-shaped, placed almost at the back of the column. *Caudiculæ* 4. *Anther* purplish, 4-celled. *Clinandrium* roundish, entire, apiculate at the base, with a roundish fleshy appendage immediately below, and streaked with purple. The plant is entirely covered with a glaucous hue.

For an opportunity of figuring this new plant we are indebted to George Barker, Esq., of Springfield, by whom it was imported from Mexico.

Although by no means showy, it is delicate in its appearance, and graceful in its mode of inflorescence. The flowers are small, but when closely examined are truly elegant. The glaucous bloom that so universally pervades the plant is somewhat remarkable.

It is closely allied to the genus *Epidendrum*, from which it differs in the structure of the column and labellum, and in the dorsal position of the anther.

We published an account of this plant in the *Floral Cabinet* of September last (No. xix.) as the type of a new genus, under the name of *Prosthechea;* but finding afterwards that a name from the same origin, and very similar in sound, was already in use, we have been induced to change it for another of precisely similar import.

The generic name *Epithecia* is derived from Επιθηκη, an appendage; the specific name *glauca* has reference to the glaucous hue of the plant.

Fig. 1, a flower magnified; 2, Anther case; 3, Pollen-masses; 4, a single pollen-mass with its caudicula.

ON THE BEST MEANS OF DESTROYING INSECTS IN THE STOVE AND GREENHOUSE.

BY DAVID CAMERON, A.L.S., Botanic Garden, Edgbaston.

All plants of a soft woody texture grown in greenhouses, and those of all descriptions in stoves, are subject to the depredations of various kinds of insects, either at particular seasons of the year, or from any irregularity of the temperature, such as a sudden transition from heat to cold, or the reverse; by too much water or too little; the parching effects of fire heat in severe weather, and various other causes which are sometimes unavoidable even under the care of the most skilful gardener. In the greenhouse the green fly is most prevalent, particularly in spring, and is readily destroyed by a fumigation of tobacco; or what is better, where it can be obtained genuine, is tobacco-paper obtained from the manufacturing tobacconist. For fumigating houses, fumigating bellows &c. have been invented; none however are better adapted to that purpose than the old-fashioned process of using strong flower-pots half filled with clear well-burnt embers of wood or coal, on the top of which is lightly placed the tobacco or tobacco-paper, and using one or more pots so filled, according to the size of the house, taking particular care that the tobacco never bursts out into a flame. Care should also be taken to place the pots so that the smoke may reach the glass without coming into contact with any of the plants, which would be certain to scorch the leaves. As the house fills, the cooler smoke descends and destroys the insects without injury to the plants. For want of this precaution much injury is frequently done to the foliage and laid to the charge of the tobacco; whereas it is the heat of the smoke that does the injury. To avoid scorching the leaves, some gardeners select the infested plants and fumigate them in frames or under hand-glasses; but the smaller the space is where the operation is performed, the greater is the danger of scorching the plants, so that where the operation is done in a small space, the pots in which the tobacco is placed ought to be small also, and the violent heat allowed to subside before the pots are introduced.

It is in the plant-stoves where a high temperature is kept up that the greatest variety of insects is to be found; such as the green fly, thrips, mealy bug, and brown scales: any of these when they attack a sickly plant, if not speedily destroyed, soon spread to the other plants. Where the collection is small and not of choice species, the infected plant can be destroyed without much loss, but in extensive and rare collections the most choice and valuable plants are too often the weakliest, and therefore the gardener has both to endeavour to preserve the plant and keep the insects under. The green fly must be destroyed by tobacco-smoke as in the greenhouse; the thrip, by tobacco mixed with damp hay; the mealy bug may also be considerably reduced by a stronger fumigation of tobacco, repeated once or twice at the interval of a day between. The brown scale can only be got rid of by careful washing with sulphur and water. Some use soft soap and water for washing off both the scale and bug; but it is rather dangerous, as it is almost certain to injure the tender foliage wherever it touches them. Oils will also destroy them readily, but that closes up the pores of the plants and brings them into a sickly state so as to render them an easy prey to insects afterwards. Sulphur put upon the flues or pipes will effectually destroy the red spider. After the plants have been cleaned, the best preventive is to endeavour to set the plants a-growing vigorously, as few insects will breed naturally upon a healthy-growing plant. Ants and woodlice are also sometimes troublesome in hothouses: the best preventive for these is to keep two or three *toads* in the house, which will destroy them readily; but the toads must have access to a damp and shaded situation during the heat of the day. They will also devour slugs; but these may be picked off the plants in the evening by candle-light.

APOCYNACEÆ.

Among the various orders of plants into which the vegetable kingdom is divided, there are very few that are entitled to more attention than the Apocynaceæ. The order, as understood by modern botanists, comprises about seventy genera, many of which are no less interesting to the naturalist than they are important to the medical man. They are chiefly natives of Africa, tropical India, and the equinoxial parts of America: two only are natives of Great Britain, *Vinca major* and *minor*, the greater and lesser Periwinkle. As regards their properties, they vary considerably, some being valuable for their febrifugal qualities; some for their emetic and cathartic properties; while others contain the most deadly poisons: indeed all the plants of this family should be regarded as exceedingly suspicious.

The essential character of the order is thus given by Dr. Lindley;—" *Calyx* divided into 5, persistent. *Corolla* monopetalous, hypogynous, regular, 5-lobed with contorted æstivation, deciduous. *Stamens* 5, arising from the corolla, with whose segments they are alternate. *Filaments* distinct. *Anthers* 2-celled, opening lengthwise. *Pollen* granular, globose, or 3-lobed, immediately applied to the stigma. *Ovaries* 2, or 1, 2-celled, polyspermous. *Styles* 2 or 1. *Stigma* 1. *Fruit* a follicle, capsule, or drupe or berry, double or single. *Seeds* with fleshy or cartilaginous *albumen; testa* simple; *embryo* foliaceous; *plumule* inconspicuous; *radicle* turned towards the hilum. *Trees* or *shrubs*, usually milky. *Leaves* opposite, sometimes whorled, seldom scattered, quite entire, often having ciliæ or glands upon the petioles, but with no stipules. *Inflorescence* tending to corymbose."

The plants of this order all agree in the above essential points of character, the genus *Apocynum* (Dog's Bane) having been selected as the type. *Apocynum* *androsæmifolium*, a shrub by no means unfrequent in botanic gardens and nurseries, is remarkable for the curious structure and arrangement of its stamens, which are five in number, with short filaments; the anthers are connivent, arrow-shaped, and cohere with the stigma about their middle; so that flies and such other insects as insert their proboscis between them, are unable to withdraw it: it is not unusual therefore, in examining the flowers of one of these plants, to find a majority of them with a fly thus detained in the little bell-shaped corolla. The plant contains a milky juice; the root is intensely bitter, and contains emetic properties.

The *Tabernæmontana utilis* of Arnott (the milk-tree or Hya-Hya of Demerara) is considered to belong to this order. This very remarkable tree is described as yielding a large quantity of rich milky fluid; so abundant indeed, that a tree which was felled on the banks of a small stream had, in the course of an hour or two, completely whitened the water. The milk is said to leave a slight clamminess upon the lips, but to be perfectly free from all acrimony. It is very questionable, however, whether it contains any nutritive qualities, as, according to the analysis of Christison, it is found to contain a small proportion of caoutchouc, and a large proportion of a substance possessing in some respects peculiar properties, which appear to place it intermediately between caoutchouc and the resins.

Ichnocarpus, a native of Ceylon, is used, according to Professor Royle, as a substitute for Sarsaparilla.—*Wrightia antidysenterica*, a native of Ceylon, Malabar, and various parts of the East Indies, furnishes the bark called *Conessi*, which has been introduced in European practice as a valuable astringent and febrifuge. Another species is particularly valuable to the dyer, as yielding a fine blue colour which has been said to be equal to indigo. The wood of some of the species is admirably adapted for turning, possessing a whiteness and a fineness of grain resembling ivory.

The genus *Nerium* furnishes some of the most splendid ornaments of our greenhouses. The leaves of *Nerium Oleander* are acrid and poisonous; they contain also, according to Decandolle, an abundance of free gallic acid. The leaves of *Vinca* (the common periwinkle) are sufficiently astringent to have been employed in the process of tanning.

The juice of the plants of this order is generally milky, acrid, more or less caustic and bitter; and it is the opinion of Decandolle that *Caoutchouc* (Indian rubber) might be obtained from the greater part of them. An excellent *Caoutchouc* is obtained in Sumatra from *Urceola elastica*.

Plumieria is a fine genus of plants, with showy fragrant flowers. *Plumieria rubra*, a native of Jamaica and Surinam, yields a highly corrosive milk.—*P. acutifolia* is a constant favourite in the gardens of India, China, and Cochinchina.

Cameraria (latifolia), the bastard Manchineel tree, a native of the meadows in Jamaica, Cuba, and Saint Domingo, is a tall elegant tree, with white terminal, corymbose flowers, and yielding a most copious supply of white coagulable milk. Dr. Lindley, in his "Flora Medica," observes, "It is probable that this plant, which is very abundant in Cuba, might prove a valuable source of caoutchouc, as the milk gushes out of the smallest wound, and readily thickens. It is however said, I know not upon what authority, to be so poisonous as to be used by the West Indian natives to envenom their arrows. Jacquin mentions nothing of it, and in Lunan's compilation the juice is merely said to be acrid."

The genus *Cerbera* contains plants no less formidable in their nature than the three-headed animal in allusion to which it was so named. The seeds of *Cerbera Ahovai* are said to be a most deadly poison. *C. Thevetia* yields a milk of an acrid and dangerous quality. A few plants have been removed from this genus, and formed into a distinct genus (*Tanghinia*), of which one of the species, *Tanghinia venenіflua*, (originally *Cerbera Tanghin*), has long been notorious as the ordeal-tree of Madagascar, the kernels of which are so powerfully poisonous that a single seed is sufficient to destroy twenty persons. The kernels of *Tanghinia Manghas* are also emetic and poisonous, but its milky juice is said to be employed as a cathartic *.

But the genus *Strychnos* is perhaps the most important in this remarkable order. *Strychnos nux vomica*, a native of the East Indies, and which was introduced into Britain about the year 1778, bears fruit about the size of a pretty large apple covered with a smooth shell, which when ripe is of a beautiful orange-colour, and filled with a gelatinous pulp, containing several orbicular compressed seeds. These seeds are well known in the shops by the names of *Nux vomica*, *crowfigs*, or *poison-nuts*. They contain a powerful and most dangerous narcotic property, which has been ascertained to depend upon a peculiar principle called by modern chemists, *Strychnia*. This principle is considered to be present in a greater or less degree in all the other species of the genus. Strychnia exerts the most extraordinary influence on the nervous system ; producing, if given in large doses, the most frightful rigidity and convulsive action of the muscles : but in the hands of the judicious practitioner, and given in minute doses in well-selected cases of paralysis and other nervous affections, it has proved a most valuable remedy.

Some of the other species of *Strychnos* are plants of great importance. *S. Colubrina*, a native of Malabar, is highly esteemed by the natives of India, the root being considered an infallible remedy for the bite of venomous snakes, particularly the *cobra de capella*. The ripe seeds of *S. potatorum*, which is found in the woods of India, are in common use there for the purpose of clearing muddy water. *S. Ignatia* (Saint Ignatius' Bean), a native of the Philippine Islands, has the reputation of being a most effectual remedy for cholera. *S. toxifera* is a native of Guyana, and has been ascertained by Mr. Schomburgk to furnish the basis of the celebrated *Woorari poison*. Dr. Hancock is of opinion that the bark of this plant is one of the most potent sedatives in nature, and if it could be safely managed, that it would no doubt become a valuable remedial agent in the treatment of convulsive and spasmodic disorders. Another species, *S. Tieute*, is a native of Java, and called by the natives, *Tjettek.* From the bark of the root of this plant, according to Dr. Lindley, there is prepared in Java, one of the most dangerous of known poisons, acting like *nux vomica*, only in a more intense and violent manner. But perhaps the most valuable species in a medical point of view is the *S. pseudoquina*, found in "wooded pasturages in all the eastern part of the province of Minas Geraes, in the Diamond and Minas Novas districts, the forest of Goyaz, and elsewhere in Brazil," where it is called *Quina do campo.* It is described by Dr. Lindley, as a scrubby tree about twelve feet high, with unarmed branches and a corky bark. Aug. de St. Hilaire is of opinion that it is the best febrifuge in Brazil, where it is universally employed instead of Cinchona. In the cure of the intermittents of that country it is considered to be equally efficacious with the well-known Peruvian Bark. It is somewhat remarkable, however, that although exceedingly bitter, more especially the bark, it does not contain that peculiar principle upon which the efficacy of Cinchona is considered to depend. According to the analysis of Vauquelin, it neither contains *brucine*, *strychnine*, nor *quinine.* Whether it may contain some new and hitherto undiscovered principle, is perhaps a matter of uncertainty.

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* The two last-named plants have recently been figured in the Floral Cabinet.

It is a fact worthy of remark that the fruits of many of the most dangerous plants of this order are eaten by the natives with impunity, even that of *Tanghinia Manghas.* Of this singular circumstance we have an example in the cherry-like fruit of the common laurel (*Cerasus Laurocerasus*), which is known to be perfectly innocuous, although every other part of the plant contains a most fatal poison.

Such are the plants which form the natural order *Apocynaceæ;* and, although they apparently present a few slight anomalies, they offer upon the whole an astonishing uniformity of properties, tending in a great measure to prove the truth of an idea which has long existed among botanists, namely, that plants which resemble each other in structure, possess similar virtues.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

MALVACEÆ. Br.

Malva creeana. Hort. Showy Red-flowered Mallow. *Bot. Mag.* t. 3698. This is an extremely pretty species of Mallow, bearing large rose-coloured flowers. It was received from Mr. Pince, nurseryman, Exeter, at the Edinburgh Botanic Garden, in the year 1837. It requires a greenhouse, and flowers freely in June and July. Of its history, or country, nothing is known, but in the arrangement of species it should be placed near to Malva divaricata. *Bot. Mag.*

VERBENACEÆ.

Verbena teucrioides. Gill. et Hook. Germander-leaved Verbena. *Bot. Mag.* t. 3694. This is a very delicate species, discovered by Dr. Gillies on the highest ridge of the Uspallata mountains in South America, at an elevation of about ten thousand feet above the level of the sea. It has also been sent by Mr. Tweedie from the hills of Monte Video, and more abundantly from the Sugar-loaf mountain of Maldonado. The seeds were collected by Mr. Tweedie, at Tandil, and were sent to the Right Hon. the Earl of Arran, in whose garden the plant was first raised, and from whose drawing the present figure has been taken.

This charming species emits a most delightful odour, resembling the jasmine, which is most powerful at night, diminishes at mid-day, and increases again towards the evening. It is of easy culture. *Bot. Mag.*

SCROPHULARINEÆ.

Collinsia heterophylla. Hook. Various-leaved Collinsia. *Bot. Mag.* t. 3695. This species of Collinsia is very near to C. bicolor, from which it is stated to differ by its lower leaves being lobate, and the hairs on the calyx coarser, by the rounded (not retuse) crenate segments of the corolla, by the subacute middle lobe of the lower lip, and by the nearly entire border to the upper side of the throat; the flowers are also larger. It is a native of America, and was found by Dr. Nuttall on the Columbia. It was raised by Mr. M'Nab, from seeds transmitted to him in spring last, by Mr. Buist, of Philadelphia, under the above name. *Bot. Mag.*

MONOCOTYLEDONES.

HÆMODORACEÆ.

Anigozanthus flavida, *var.* **bicolor.** Lindl. Two-coloured yellow-haired Anigozanthus. *Bot. Reg.* N. S. t. 64. This plant differs from A. flavida in having a more divaricating panicle, and scarlet ovarium. *Bot. Reg.*

MELANTHACEÆ.

Zigadenus glaucus. Gray. Glaucus Zigadenus. *Bot. Reg.* N. S. t. 67. This is a pretty plant, bearing flowers not unlike those of the genus Ornithogalum. It is a native of North America, and extends from Canada and Kotzebue Sound as far as Arkansa and Oregon. Dr. Gray saw specimens collected on the high plains near the rivers Platte and Multoromah. It has also been collected near Lake Superior, by Dr. Torrey, and on the North-west coast of North America, by Mr. Douglass, who supposed it to be Z. elegans of Pursh.

It is figured from a specimen in the collection of Messrs. Chandler and Sons, of Vauxhall, which was exhibited at one of the meetings of the Horticultural Society in Regent-street, where it was much admired. It is a hardy perennial, flowering in July and August, and grows well in either loam or peat, and is easily increased by seeds or division of the roots. The seeds should be sown in March in pans, and placed in a cold frame or pit; and the seedlings will flower in the second or perhaps third year after sowing. *Bot. Reg.*

ORCHIDACEÆ. Lindl. MALAXIDEÆ. Lindl.

Pleurothallis lateritia. Lindl. Brick-dust-coloured Pleurothallis. Foliis subspathulatis crassis; scapo subflexuoso; folio longiore; sepalis lateritiis; petalis sub aureis; labello subtriangulo.

This new species of Pleurothallis is in the collection of George Barker, Esq., of Springfield, who imported it from Mexico in the year 1837, and with whom it flowered for the first time in last November, 1838.

The genus Pleurothallis, from the almost daily introduction of species, is now becoming so extensive as evidently to require revision; and we cannot help thinking that a number of the species at present retained, are not entitled to be considered more than mere varieties. Indeed we have examined some in the above-named gentleman's collection, so closely approaching the present species, that (if we except the colour, and the somewhat smaller leaves,) it would be difficult to detect in them any points of difference, upon which to frame a specific character.

Dendrobium Sulcatum. Lindl. Furrowed Dendrobium. *Bot. Reg.* N. S. t. 65. This is certainly a beautiful species bearing golden yellow flowers, and, according to Dr. Lindley, related to D. Griffithianum, from which it differs in its three flowering peduncles, and in the form of the lip.

It is a native of India, and was obtained by Mr. Gibson for His Grace the Duke of Devonshire.

The following important observations on its culture are given by Dr. Lindley. "At certain seasons of the year," says the above distinguished author, "the plants manifest an inclination for growth; they must then have plenty of water, and be freely syringed overhead. When the growing season is over, the leaves will become yellow and finally drop off; water then must be discontinued, the temperature lowered, and the plant allowed a season of rest. After remaining in this state for a few weeks, the temperature may be again raised, and the plants—which by this treatment will have been rendered excitable—will come freely into flower." Water need not be given until the plant begins to shoot from below, when it will require the same treatment as before. It must have the same soil as other orchidaceous plants. *Bot. Reg.*

EPIDENDREÆ.

Cattleya Guttata *var.* **Russelliana.** Hook. Spotted Cattleya, Lord Edw. Russell's *var. Bot. Mag.* t. 3693. This is a very beautiful variety of Cattleya Guttata, and was brought to the Woburn collection from Brazil with many other rare South American productions, in the spring of 1838, by Capt. Lord Edw. Russell, R. N., then commanding her Majesty's ship Actæon. It was given to that nobleman by the director of the botanic garden at Rio, with the information that it was one of two specimens that had recently been discovered in the Organ Mountains.

Widely as its inflorescence differs in size and colour from Dr. Lindley's C. guttata, it cannot be considered otherwise than as a beautiful and stately variety, worthy of a place in every choice collection of Epiphytes. *Bot. Mag.*

Epidendrum Stenopetalum; pseudobulbis cylindraceo-oblongis; foliis lanceolatis; floribus solitariis; sepalis lanceolatis; petalis angustè linearibus labello trilobo, lobo medio cuspidato-purpureo, lobis lateralibus subrotundis albidis columnam involventibus.

This delicate and pretty species of Epidendrum is a native of Mexico, and was imported by Geo. Barker, Esq., in the year 1837. Its sepals and petals are brownish, the labellum is white having the upper portion tinged with purple. It appears to be a species that only produces a solitary flower at a time.

§ VANDEÆ.

Comparettia coccinea. Lindl. Scarlet Comparettia. *Bot. Reg.* N. S. t. 68. This is a beautiful epiphyte, bearing a raceme of brilliant scarlet blossoms, mixed with golden yellow. It is said to be a native of Brazil, but it agrees so completely with specimens which Dr. Lindley has received from Xalapa, that he imagines there must be some mistake in its reputed country. Dr. Lindley further remarks on this genus:—Nothing is more common than for orchidaceous plants to produce spurs from the sepals and labellum, but it is very unusual for the same organ to produce two spurs. Satyrium and Diplocentron were almost the only cases of this structure. Here, however, the labellum not only has two spurs, but they are hidden within the spur of the united pair of lateral sepals, so that they are not discovered till the latter is cut open. In this respect we find almost the same structure for Orchidaceæ as we have in Aconitum among Ranunculaceæ. Comparettia consists at present of this and two other species inhabiting Peru. Of these C. falcata approaches the present in many respects. It, however, appears to differ in having broader leaves, larger flowers, no elevated plate at the base of the stigma, and the spurs of the lip smooth. *Bot. Reg.*

ACOTYLEDONES.

Polypodium glaucum; *sp. nov.* fronde ovatâ glaucâ profundè pinnatifidâ; laciniis lanceolatis marginatis obtusis terminali elongatâ; soris uniserialibus; stipite glabro, caudice subsquamoso.

This species of Polypodium was imported from Mexico amongst some orchidaceous plants by Geo. Barker, Esq. of Springfield. Its nearest alliance is certainly to that of P. areolatum, but from that species it will be seen to be distinct by being glaucous on both sides of the frond instead of only on the one side, by not being farinaceous underneath, and by having the sori in lines instead of being scattered. From P. aureum it differs in having the divisions of the frond *obtuse not acuminate*, and the caudex much less chaffy; it has also a creeping root, and in its native country appears to be scandent.

CALENDAR OF GARDENING OPERATIONS FOR JANUARY.

The *plant-stove* will require the same treatment as recommended for last month. The *greenhouse* must have plenty of air in mild weather. All *leaves* must be picked off the plants as they begin to decay, and the plants frequently turned round upon the stage to prevent them from getting one-sided. Fresh surface the soil in the pots when it gets too firm or becomes green. This operation is as necessary to plants in pots as that of digging and hoeing is to those in the open ground.

The half-hardy plants protected in pits and frames, ought to have abundance of air in fine weather, so as to keep their leaves and the surface of the soil in the pots as dry as possible. During severe frost, even if the sun shines bright during the day, it is more advisable to allow the covering to remain on, particularly after the surface of the pots has begun to freeze.

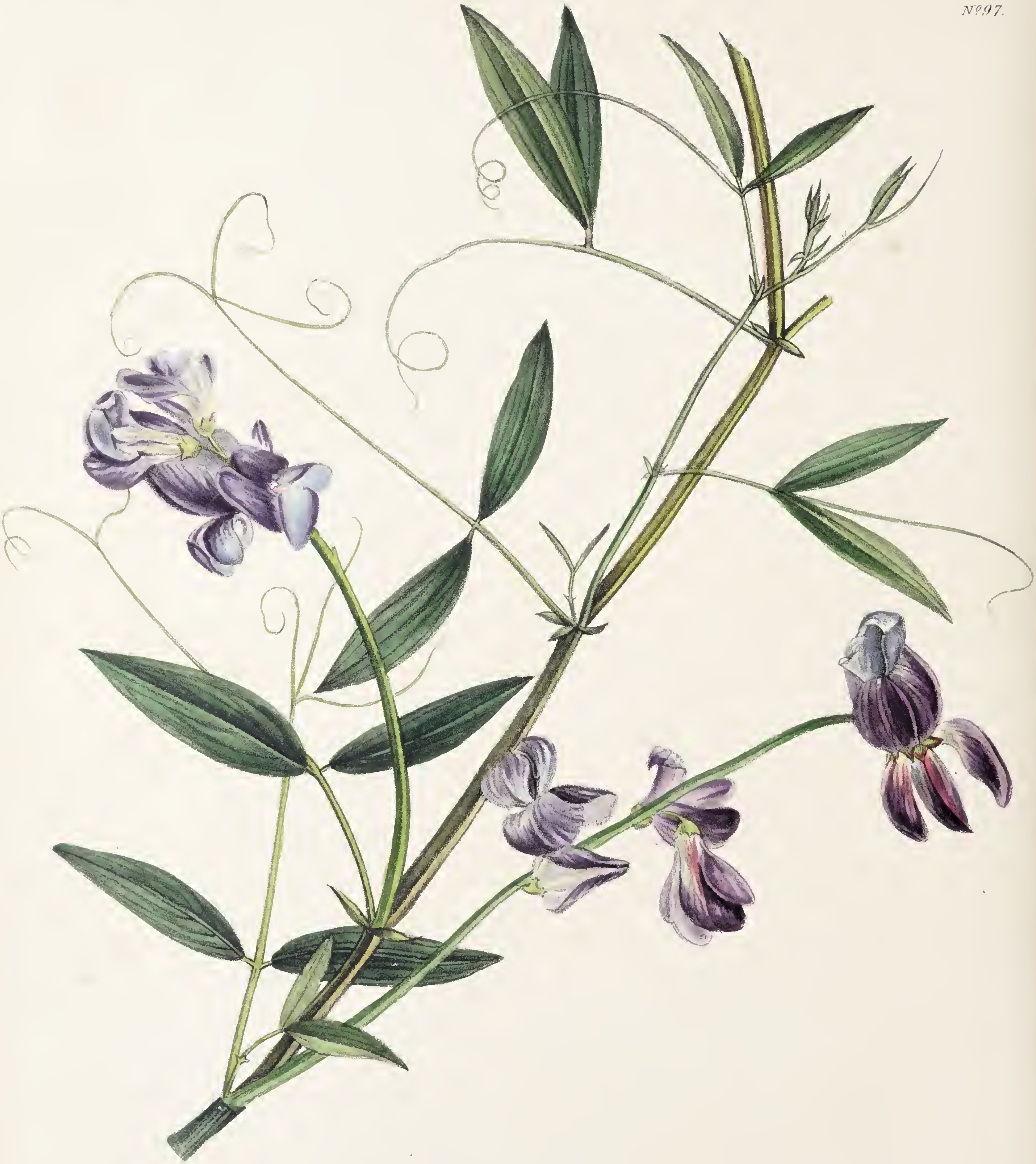
A succession of *Roses* and other hardy plants for forcing ought to be brought into the houses occasionally; and also *Strawberries.*

Kidney Beans, where there is a convenience of forcing them in pine-stoves and early vineries, may now be sown in pots with a tolerable certainty of obtaining a good crop. The forcing of *Cucumbers* is frequently commenced in November with uncertain success, but ought now to be commenced whether it has been attempted earlier or not. Cuttings of the more free-growing *Ericas*, such as *hybrida tubiflora*, *gracilis*, *caffra*, *persoluta*, *&c.*, should now be put under bell-glasses; these will be rooted, and thus allow the glasses to be ready for the more difficult kinds in March.

This is the very best month for inarching *Camellias.* Cuttings of Verbenas, Salvias, Fuchsias, and other soft-wooded plants, may be struck in heat so as to be ready for turning out into the flower borders in May.

Roots of the very newest *Dahlias* may now be potted and set a-growing to obtain top cuttings: but it is a bad practice to begin starting them so early unless when considerable increase is wanted. Plants from top cuttings seldom do so well for growing as those taken off with a heel later in the season; and many of the roots frequently perish during the ensuing winter for want of a sufficient number of eyes near the root.

No. 97.



Lathyrus Purpureo-cæruleus.

F. Cameron del.

Day & Haghe Lithrs

LATHYRUS PURPUREO-CÆRULEUS.

(*Purplish-blue Lathyrus.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DIADELPHIA DECANDRIA.	LEGUMINOSÆ.

GENERIC CHARACTER.

Lathyrus (Lin.) *Calyx* campanulatus 5-fidus. *Lobis* 2 superioribus brevioribus. *Corolla* papilionacea. *Stamina* diadelpha. *Stylus* complanatus, apice dilatatus, anticè villosus aut pubescens. *Legumen* oblongum polyspermum, bivalve, 1-loculum. *Semina* globosa aut angulata. *Herbæ* sæpius scandentes. *Stipulæ* semi-sagittatæ. *Petioli* apice in cirrhum ramosum abeuntes. *Foliola* 1-3 juga. *Pedunculi* axillares.—*Decand. Prod.* vol. ii. p. 369.

Calyx campanulate, divided into five parts, having the two upper ones shorter than the others. *Corolla* papilionaceous. *Stamens* in two sets (one and nine). *Style* flattened, dilated at the apex, on the upper part villous or downy. *Pod* oblong, many-seeded, two-valved, one-celled. *Seeds* round, or angular. *Herbaceous plants* more often climbers. *Stipulæ* half arrow-shaped. *Petioles* passing into a branched tendril at the apex. *Leaflets* 1-3 pairs. *Peduncles* axillary.

SPECIFIC CHARACTER.

L. purpureo-cæruleus: suffruticosus; *caule* angulato; *foliis* longe petiolatis unijugis foliolis lanceolatis subpubescentibus mucronatis; *cirrhis* solitariis; *stipulis* minutis: *floribus* 6-8 racemosis *foliis* longioribus purpureo-cæruleis.

Suffruticose; *stem* angular; *leaves* longly petiolate, one pair; *leaflets* lanceolate, somewhat pubescent, mucronate; *tendril* solitary; *stipules* minute; *flowers* from six to eight, racemose, longer than the leaves, purplish blue.

Lathyrus purpureus.—*Flor. Cab.* p. 126.

Descr.—*Stem* climbing, suffruticose, the new shoots angular. *Leaves* one pair; leaflets lanceolate, slightly pubescent, veined, mucronate; petioles nearly the length of the leaflets; tendril unbranched, solitary. *Stipules* minute, half arrow-shaped. *Flowers* racemose, purplish blue. *Standard* notched, wings ovate, obtuse, keel obtuse. *Calyx* pubescent, divisions five, awl-shaped, each having a green rib, the two upper ones minute, the three lower ones four times the length of the upper ones. *Peduncles* longer than the leaves, smooth. *Pedicels* about three lines long, pubescent. *Stamens* 9-1. *Style* bent at right angles with the legume, somewhat spathulate, pubescent at the back. *Legume* covered with soft silky hairs. *Seeds* ——.

This pretty species of Lathyrus we published a description of at page 126 of the *Floral Cabinet.* It is suffruticose, and, to all appearance, perfectly hardy, having stood the severity of last winter without the slightest injury. It appears to be well adapted for decorating a south wall, in which situation it will grow rapidly, and bear numerous racemes of its charming flowers; such is its aspect in the Birmingham Horticultural Gardens, where it was first raised from seeds; it is now upwards of ten feet high, and in full foliage. As we have before stated, the Society is indebted for the seeds to Mrs. Charles Shaw, of Birmingham, who received them from Brazil.

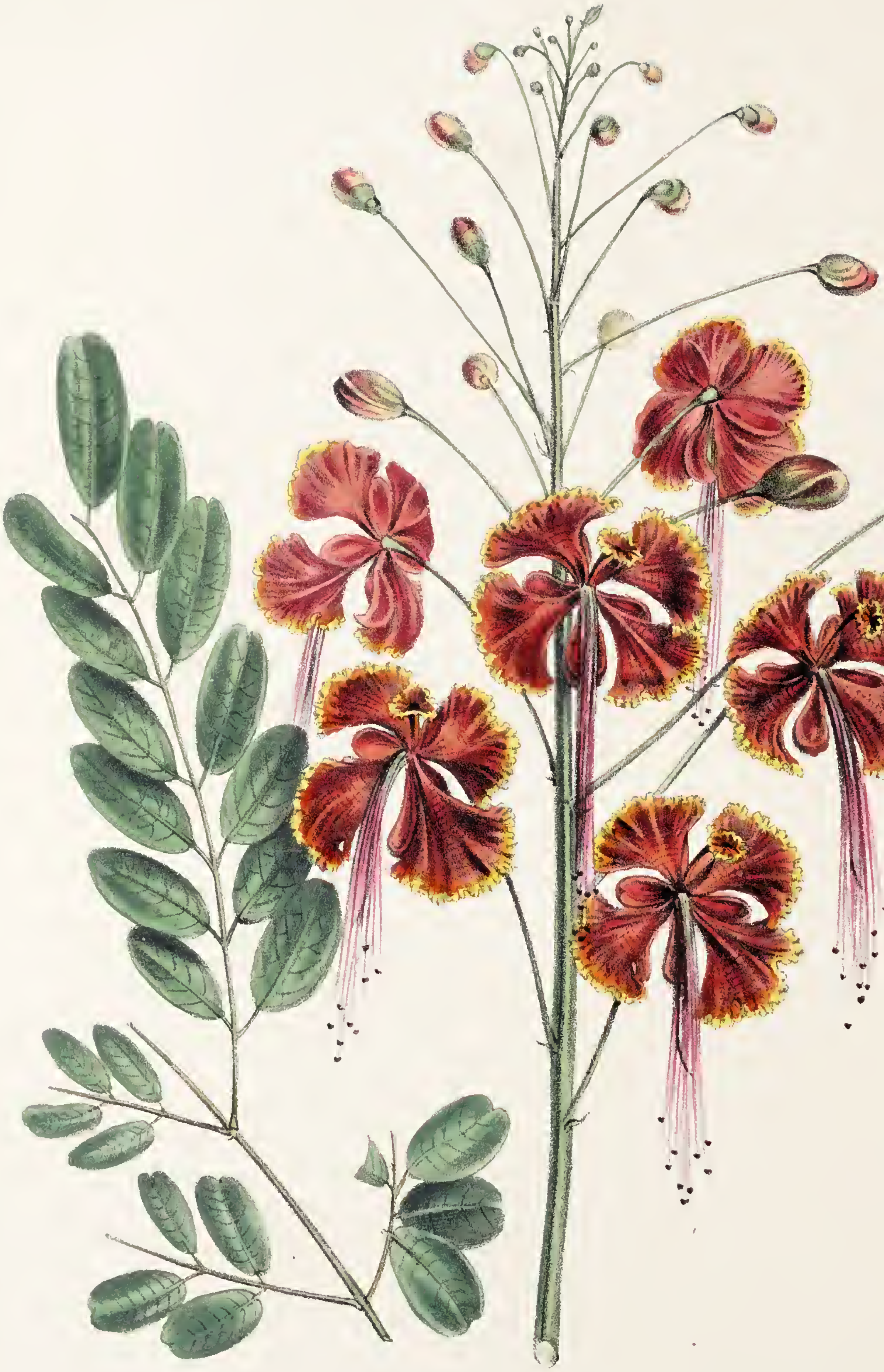
When cultivated in pots, the soil that suits it best is loam and peat. It has not yet produced any seeds, but may be increased by cuttings of the firm wood taken off with a heel, and placed in a gentle heat. It flowers in the months of August and September.

The different species of Lathyrus are valued chiefly as ornamental plants; the sweet pea, the everlasting pea, the Tangier pea, &c., have long been favourites in gardens, where they are often selected for ornamenting trellis-work, &c.

Some of the species possess poisonous properties, and should, on that account, always be regarded with suspicion. *Lathyrus sativus* is commonly sown as food for horses; and the meal of its seeds is occasionally made into bread in several parts of the Continent; but its continued use is said to be highly injurious. In the seventeenth century such dreadful effects followed the consumption of this bread, that its use was forbidden by an edict of George Duke of Wirtemberg, in 1671; but this edict being disregarded, two other edicts were issued and enforced by his successor Leopold, in 1705 and 1714.

It is stated by Duvernay, that equal quantities of wheaten-flour and the flour of *L. sativus* make good and wholesome bread; but that if used alone for any length of time, it produces the most frightful symptoms, such as rigidity of the limbs, and a loss of muscular power, which is never restored. The same effect is produced by it upon various animals, as horses, swine, &c.

The generic name, Lathyrus, is derived from ΛΑΘΥΡΟΣ, a vetching; the specific name, *purpureo-cæruleus*, has reference to the colour of its flowers.



Poinciana pulcherrima.

Mills del.

Day & Haghe Lithrs to the Queen.

POINCIANA PULCHERRIMA.

(*Beautiful Poinciana.*)

LINNEAN SYSTEM.	NATURAL ORDER.
DECANDRIA MONOGYNIA.	LEGUMINOSÆ.

GENERIC CHARACTER.

Poinciana (Lin.) *Calycis* sepala 5 inæqualia basi in cupulam subpersistentem coalita, inferiore fornicato. *Petala* 5 stipitata, superiore difformi. *Stamina* 10 longissima, omnia fecunda, filamentis basi hirsutis. *Stylus* longissimus. *Legumen* plano-compressum bivalve submultiloculare isthmis spongiosis. *Semina* obovata compressa, endoplevrâ in aquâ gelatinosâ, cotyledonibus planis, plumulâ ovali. *Frutices* aut arbores elegantissimæ, aculeatæ aut inermes. *Folia* abruptè bipinnata. *Flores* paniculato-corymbosi. *Pedicelli* longi basi ebracteati.—*Decandolle, Prod.* vol. ii. p. 483.

Sepals five, unequal, joined at the base into a somewhat persistent cup, the lower one arched. *Petals* five, stipitate, having the upper one of a different form. *Stamens* ten, very long, all bearing anthers, filaments hairy at the base. *Style* very long. *Legume* flatly compressed, two-valved, somewhat many-celled with spongy isthmuses. *Seeds* obovate, compressed, having the internal integument in a gelatinous water, cotyledons flat, plumula oval. *Shrubs* or elegant trees, prickly or smooth. *Leaves* abruptly bipinnate. *Flowers* disposed in a corymbose panicle. *Pedicels* long, without bracteas at the base.

SPECIFIC CHARACTER.

P. pulcherrima (Lin.); *aculeata*, foliolis ovatis obovatisve emarginatis glabris; *petalis* fimbriatis longè stipitatis.

Prickly leaflets ovate or obovate, notched at the end, smooth; *petals* fimbriate, longly stipitate.

Poinciana pulcherrima.—*Lin.*—*Bot. Mag.* t. 995.

Cæsalpina pulcherrima.—*Swartz.*

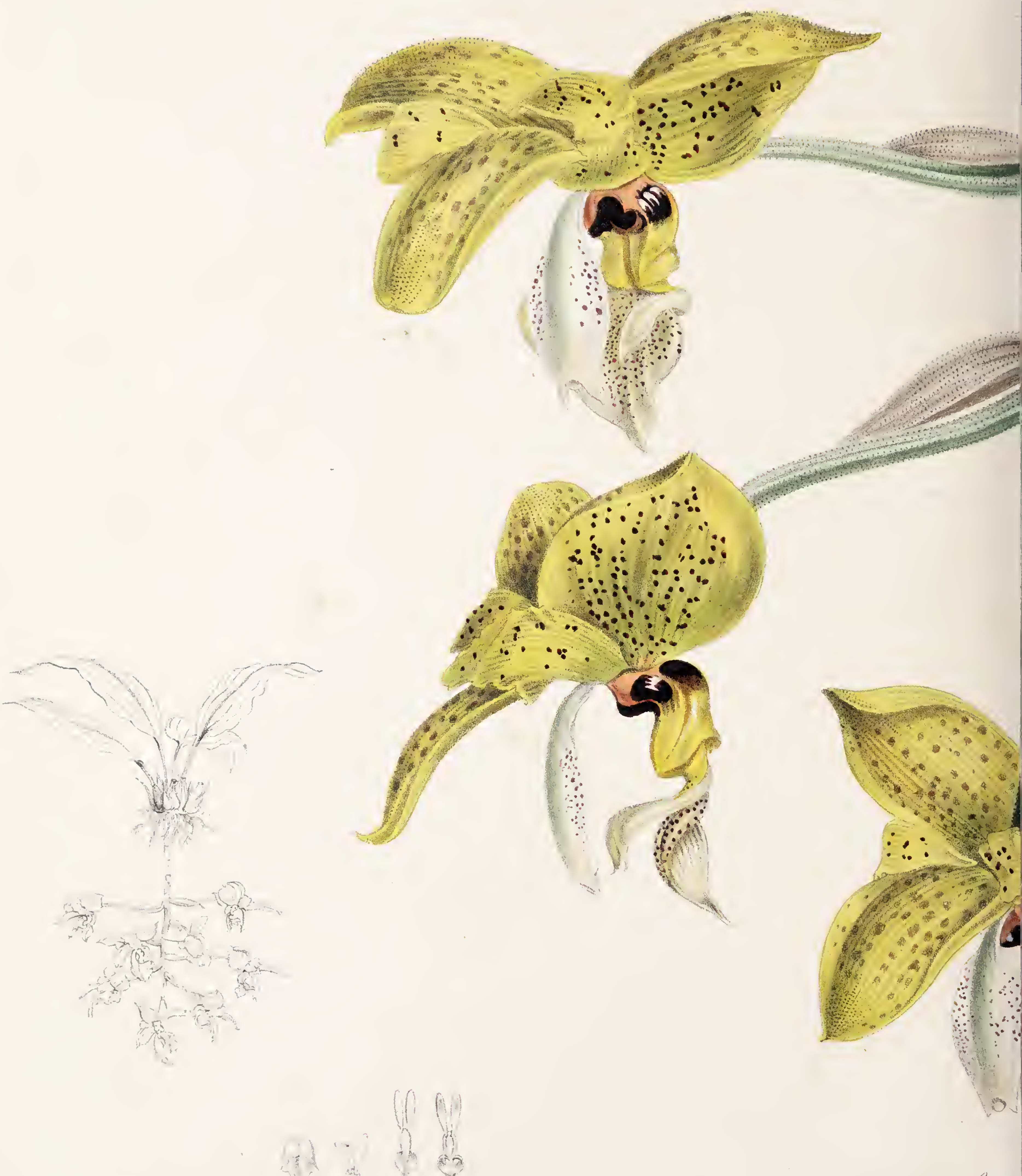
This most magnificent shrub grows to the height of ten feet and upwards; and, as the plate shows, bears panicles of the most brilliant flowers. It is a native of the East Indies. Ligou states, that it was imported into Barbadoes from the Cape de Verd Islands. Its beauty has attracted the attention of the Chinese for some time, and wherever they settle they cultivate it, and call it by the name of the peacock's crest. It was introduced into Holland from Amboyna about the year 1670, and was cultivated in the Chelsea Garden by Sir Hans

Sloane in the year 1691. The flowers are sweet-scented, but the whole plant when bruised has a disagreeable odour like that of Savin, and it is considered in the West Indies to partake of its properties. This plant is valuable in the West Indies (independent of its beauty) for making fences, mixed with *Parkinsonia aculata;* which, says Jaquin, forms one of the most beautiful fences imaginable.

This is a stove shrub requiring a strong heat, with plenty of pot-room to grow it well. The soil should be three-fourths loam and one-fourth well-rotted dung and peat, using plenty of drainers. It is propagated by seeds, which are occasionally received from the East and West Indies, and tropical America. There are frequently sent home different varieties, distinguished merely by the colour of the flowers.

Our drawing was made from a splendid specimen kindly sent to our artist by John Willmore, Esq., of Oldford, about two years ago, when the plant flowered for the first time in that gentleman's collection. The stamens, which are always assurgent in this species, have been represented by our artist as declinate, owing, no doubt, to their having begun to flag before the drawing was commenced.

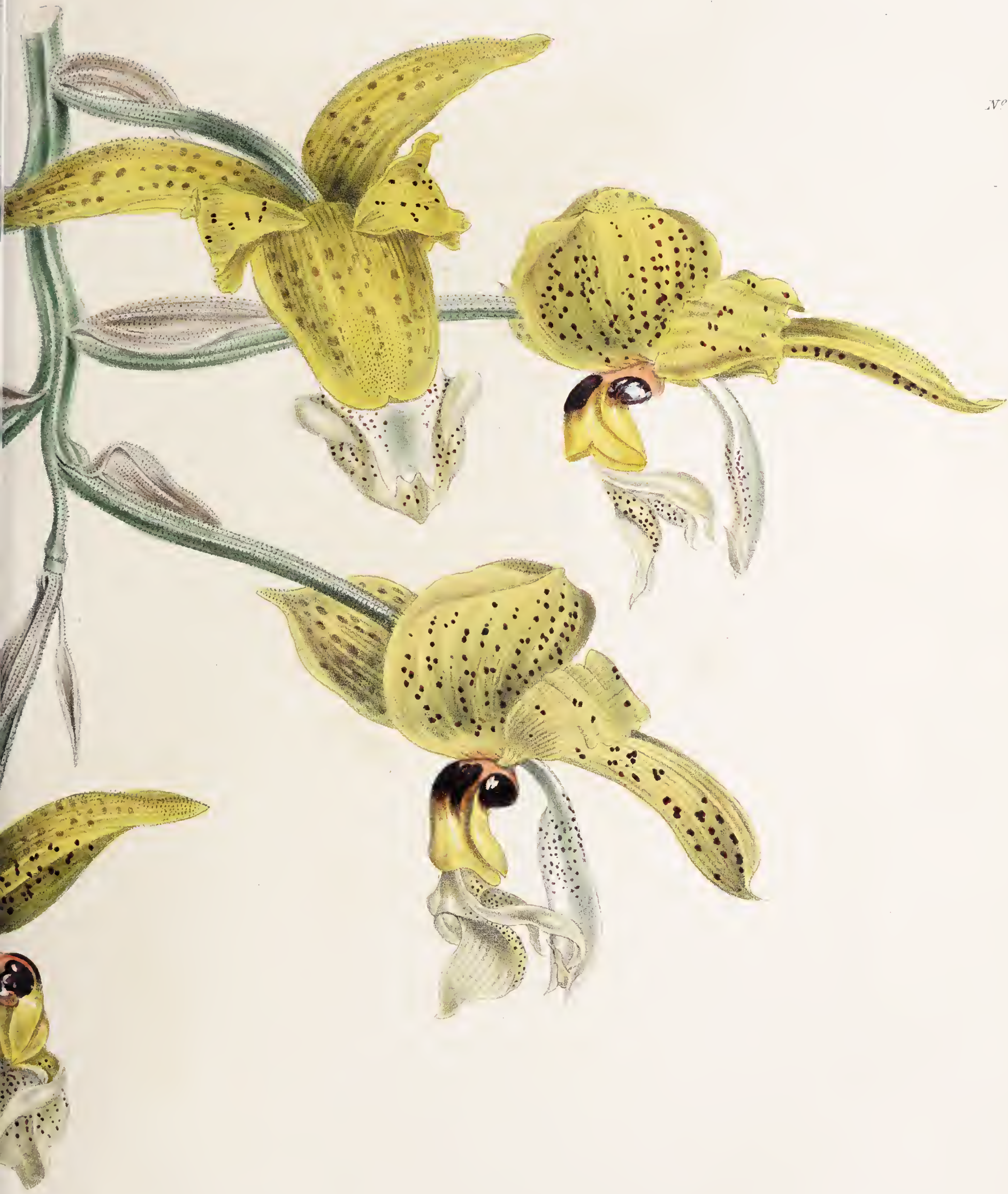
Its generic name is in compliment to M. de Poinci, governor of the Antilles: *pulcherrima* refers to the beauty of its inflorescence.



Day & Haghe Lithrs to the Queen

Stanho

Nº 90.



a Wardii.

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STANHOPEA WARDII.

(*Mr. Ward's Stanhopea.*)

LINNEAN SYSTEM. NATURAL ORDER.
GYNANDRIA MONANDRIA. ORCHIDACEÆ.

GENERIC CHARACTER.

Stanhopea (Hooker). *Perianthium* membranaceum, patentissimum vel reflexum. *Sepala* libera, subundulata, mole suâ ruentia. *Petala* conformia angustiora. *Labellum* liberum, anticum, ecalcaratum, carnosum, utrinque cornutum ; dimidio superiore (*epichilio*) convexo, inferiore (*hypochilio*) excavato. *Columna* longissima, petaloideo-marginata. *Anthera* 2-locularis. *Pollinia* 2, elongata, fissa, caudiculâ quàm glandula biloba stipitata breviore. *Epiphytæ pseudobulbosæ.* *Folia* plicata. *Scapi* radicales, vaginati, pauciflori. *Flores* maximi magis minusve maculati.—(*Lindl. gen. et. sp.*)

Perianth membranaceous, widely spread open, or reflexed. *Sepals* free, somewhat undulate, pendent from their own weight. *Petals* similar in form, narrower. *Lip* free, placed anteriorly, spurless, fleshy, horned on each side, the upper half (*epichilium*) convex, the lower half (*hypochilium*) excavated. *Column* very long, with a petal-like margin. *Anther* 2-celled. *Pollen-masses* 2, elongated, cleft, with a *caudicula* shorter than the 2-lobed stipitate gland. *Pseudobulbous epiphytes.* *Leaves* plaited. *Scapes* radical, sheathed, few-flowered. *Flowers* very large, more or less spotted.

SPECIFIC CHARACTER.

S. Wardii (Lodd.) *racemo* pendulo multifloro ; *sepalis* lateralibus subrotundo-oblongis concavis acutis basi altè connatis ; *petalis* lanceolatis undulatis revolutis ; *hypochilio* sessili angusto saccato intus tuberculato medio angustiore marginibus approximatis depressis complanatis basi connatis ; *mesochilio* utrinque cornuto in medio sinu cornuum foveato ; *epichilio* cornuum longitudine subrotundo-ovato acuto indiviso marginibus recurvis.—(*Lindl.*)

Raceme pendulous, many-flowered ; *lateral sepals* subrotund-oblong, concave, acute, highly connate at the base ; *petals* lanceolate, undulate, revolute ; *hypochilium* sessile, narrow, saccate, tuberculate within, the middle narrower, with the margins approximate, depressed, complanate, and connate at the base ; *mesochilium* horned on each side, hollowed between the horns ; *epichilium* the length of the horns, subrotundo-ovate, acute, undivided, with recurved margins.

Stanhopea Wardii, in Lindley's *Sert. Orchid.*

Descr.—*Pseudobulbs* ovate, furrowed ; *leaves* lanceolate, somewhat acuminate, with a furrowed petiole ; *scape* pendulous, furrowed, many-flowered ; *pedicels* very long, stretching forth at nearly right angles with the scape ; *bracteas* as long as the pedicels, sheathing of a pale reddish brown, and thickly sprinkled (as are also the scape and pedicels) with exceedingly minute dots, which, under the microscope, are prominent, giving the surface a warty appearance. *Sepals* of a clear golden yellow colour, copiously spotted with rich chocolate brown, the lateral ones roundish, oval, concave, and united for some distance from the base, the upper one more lanceolate; *petals* of a somewhat paler yellow, thinner in texture, spotted like the sepals, lanceolate in form, with an acute apex and a very wavy margin, and so completely revolute that their ends overlap each other behind the upper sepal. *Lip* nearly sessile, the lower portion (*hypochilium*) about an inch long, thick and fleshy, the base of which is of a deep yellow-orange colour, with four dark brown blotches, of which the two upper ones have a shining, varnished appearance; the middle portion (*mesochilum*) about a quarter of an inch long, constricted, from each side of which is produced a fleshy, incurved, sharp-pointed horn; the upper portion (*epichilium*) ovate, acute, undivided, concave in the centre, the edges recurved at the base, and, together with the middle portion, of a bright yellow, spotted like the rest of the flower. *Column* the length of the labellum, the centre green, the margin beautifully transparent, and most delicately spotted. The cavity at the base of the lip is studded with minute tubercles, which, as Dr. Lindley observes, gives it the singularly rich and sparkling appearance of a grotto lined with purple and yellow spar.

This is one of those extraordinary plants which astonish us no less by the singular forms, than by the splendid colours of their flowers. It is in the collection of George Barker, Esq., of Springfield, who received it from Messrs. Low, of Clapton. A specimen of this beautiful species flowered a short time since with Messrs. Loddiges, of Hackney, and has recently been figured by Dr. Lindley in his magnificent *Sertum Orchidaceum;* but, handsome as Messrs. Loddiges' plant appears to have been, it must have been very inferior to that of Mr. Barker, which is evidently in a more vigorous state, the flowers being larger and more numerous.

"It differs from *S. quadricornis* in the lower part of the lip not having a strong horn on the side; from *S. occulata*, in the lip being sessile, not stipitate, and a great deal shorter in proportion to the other parts; and from *S. saccata*, an unpublished species of Mr. Bateman, in the middle segment of the lip not being 3-lobed, in the sharpness of the petals, and in the form of the horns of the lip."—(*Lindley's Sert. Orch.*)

The genus Stanhopea was so named in compliment to Earl Stanhope, a distinguished patron of botany. The specific name is in compliment to Mr. Ward.

Fig. 1, anther case; 2, anterior view of the pollinia, caudicula, and gland; 3, posterior view of do.; 4, the same, with a vertical section of one of the pollinia, showing the lateral fissure.

OBSERVATIONS ON CLIMBING PLANTS.

(*Continued from page 56.*)

The following species of the more showy kinds of hardy climbers may be advantageously planted against and trained to a wall; that protection, however, is not essential to their producing their flowers in perfection, as they will succeed equally well against an open trellis; or they may be planted singly, so as to ascend a pole or any device of fancy wire-work. *Apias* tuberosus; *Aristolochia* pubescens and sipho; *Clematis* alpina, campaniflora, flammula, orientalis, sibirica and triternata; *Periploca* græca; *Rosa* boursalt, Bengal florida, ruga, Maria Leonides, and all other rambling roses.

The following will seldom succeed well except against a wall, where they are very ornamental; some of them attain a considerable height, and are therefore well adapted for planting against dwelling-houses, particularly where they are wished to be covered: viz. *Alstrœmeria* acutifolia and hirtella; *Bignonia* radicans; *Baussingaultia* basilloides; *Caprifolium* flavum, flexuosum, japonicum and sempervirens; clematis florida and florida pleno; Rosa Banksiæ, Banksiæ lutea, Brunonii, Grevillea and multiflora; Wistaria frutescens and sinensis; passiflora cærulea, and hybrids.

In addition to these hardy kinds, the wall and trellis may be enlivened during summer by many half-hardy climbers, which, after being gradually hardened, may be planted out in May, and if placed in good soil, most of them will continue flowering until cut off by the autumn frosts. The more showy of these are, *Calampilis* scaber; *Cobæa* scandens; *Lophospermum* erubescens, scandens, and volubile; *Maurandya* antirrhiniflora, Barclayana, and semperflorens; *Mutiora* latifolia; *Loasa* lateritia; *Sollya* heterophylla; *Tropæolum* minus pleno, pentaphyllum, tricolorum and tuberosum.

As few walls are entirely covered with climbers without a mixture of other showy plants that are not climbers, it may not be out of place to give a list of such plants as are best adapted to that purpose: they are, *Cercis* siliquestrum; *Daphne* altaica, collina, tinifolia, and Tarton-raira; *Edwardsia* grandiflora; *Eriobotrya* japonica; *Jasminum* revolutum; *Maclura* aurantiaca; *Magnolia* grandiflora, grandiflora *var.* exoniensis, conspicua, and obovata; *Ligustrum* chinensis; *Punica* granatum, &c.

All these plants will do in any light garden soil, which ought to be trenched over two feet deep before planting; or should it be necessary, from the nature of the soil, for a border to be made for them, it may be two feet deep, composed of three-fourths loam, one-fourth peat, with about one-eighth of sharp pit or river sand.

ON THE CULTIVATION OF SALPIGLOSSIS AND ITS VARIETIES.

BY DAVID CAMERON, A.L.S.

The different species and varieties of *Salpiglossis* may be considered as well worthy of cultivation, being highly ornamental for decorating the stage of the greenhouse, or during summer while the greenhouse plants are out of doors, or for transplanting into the open borders in May or June, in which situation they will continue to produce an abundance of flowers until late in the autumn. They may also be sown as annuals in the borders in April, and in favourable situations will frequently flower well.

Salpiglossis and its varieties were in much repute a few years ago, but their day appears to have gone by without any just cause.

When plants of this genus are intended for flowering in the greenhouse, they should be sown early in spring in a hotbed, and removed into the greenhouse when about eight inches or a foot high; but to have them in perfection, they should be sown in the August of the previous year, and when for transplanting should be placed five or six around the sides of a store-pot in a mixture of loam and well-rotted dung, with plenty of drainers in the bottom of the pot, and kept in the most cool and airy part of the greenhouse during the winter, and as near the glass as possible. In March they should be transplanted singly into small pots, and in the same compost as previously described, and still be kept near the glass. As they advance in growth and fill the pots with roots, they must be shifted into pots of a larger size, which must be continued as the plants grow; *but over potting must be avoided* at any shifting, until they are finally placed in *twenty-fours*, which will be sufficiently large for their remaining in to flower.

In watering these plants, care should be taken not to wet the leaves at any time, and more particularly during the winter, as they are at all times liable to damp off if wetted when grown in a greenhouse. They are liable to be attacked by the green aphis (the only insect that annoys them), which may be removed by the directions given at page 73 of this volume.

When grown in the greenhouse, or out of doors, a kind of damp often destroys the young as well as the older branches for about the length of half an inch in various parts of the plants, leaving the shoots perfectly sound both above and below the injured spot. Where this occurs, it is necessary to cut off the branch below the injury into the sound stem, for these spots, if left, invariably spread in all directions until the whole plant is destroyed, and the same happens if cut off at the diseased spot without cutting into the sound wood.

When intended for transplanting into the open borders, they should be also raised from seed in autumn, and treated as if for the greenhouse until the latter end of May or the beginning of June, which is the time for turning them out.

They produce but few seed-pods, unless artificial impregnation is resorted to, and by that means every capsule will produce seeds. As they readily sport into varieties, they are worthy of cross impregnation with the view of obtaining new varieties. When sown as annuals in the open border, they should be sown thin and shallow in a fine piece of light soil, and as they come into flower they will require to be carefully staked, as their stems are brittle and not capable of withstanding the wind.

BOTANICAL NOTICES OF NEW PLANTS.

DICOTYLEDONES.

LEGUMINOSÆ. Juss.

Trifolium hybridum. Lin. Hybrid Clover. *Bot. Mag.* t. 3702. This species of Clover bears heads of pale yellow flowers tinged with pink, and rather smaller than those of *T. pratense.* It is a native of Europe, from Italy to Sweden, and when cultivated affords an excellent food for cattle. It was raised in the Glasgow Botanic Garden, and flowered in June and July. *Bot. Mag.*

CAPRIFOLIACEÆ. Rich.

Leycesteria formosa. Wallich. Handsome Leycesteria. *Bot. Mag.* t. 3699. *Bot. Reg.* N. S. 2. This plant was figured last month both in the *Botanical Magazine* and *Botanical Register.* It is a very handsome shrub, about twelve feet high, growing wild, according to Dr. Wallich, on the highest mountains surrounding the valley of Nepal, and blossoms from April to October. It has also been received from more northerly situations towards Gossain Than. Dr. Goven found it in abundance at an elevation seldom less than 8000 feet above the pine and oak forests of Bishuhur, as at Huttoo, and at Desoo, in the Thakooraee of Kioonthul, blossoming from June to August, and called by the natives Nulkuroo. It was raised from seeds by the London Horticultural Society, which were procured from India by Dr. Royle. It is perfectly hardy, having stood the severity of last winter without injury. It appears to be impatient of dryness, and becomes yellow and unhealthy in the front of a south wall, but flourishes in an exposed situation from east to west. It is increased freely by cuttings and layers, and will probably before long produce berries. *Bot. Reg.* and *Bot. Mag.*

COMPOSITÆ. § SENECIONIDEÆ. Dec.

Marshallia cæspitosa. Nutt. Tufted Marshallia. *Bot. Mag.* t. 3704. This plant bears heads of pale pink flowers disposed after the manner of the genus Scabiosa and Armeria, and when cultivated in patches, is stated to have a very pleasing appearance. It is a native of North America, and was discovered by Mr. Nuttall in the Red River territory, by Berlandier at Villa de Austin, in Texas, and by Mr. Drummond in Galvaston Bay, and from whom seeds were received at the Glasgow Botanic Garden, from which plants were raised, which flowered in a cool frame in that establishment in July and August last. *Bot. Mag.*

LABIATÆ. Juss.

Leonotis nepetæfolia. R. Brown. Catmint-leaved Leonotis. *Bot. Mag.* t. 3700. This is a very handsome herbaceous plant, bearing dense whorls of red flowers. It is a native of Africa; but the present species is not only found there, but in various parts of the continent of India and the adjacent islands, and probably imported also from Brazil. It is not unfrequent in collections. The present plant flowered in the Glasgow Botanic Garden in July, 1837. *Bot. Mag.*

PORTULACACEÆ. Lindl.

Calandrinia discolor. Lindl. Two-coloured Calandrinia. *Bot. Reg.* N. S. t. 4. This is a beautiful and showy plant, introduced from the Berlin Botanic Garden in 1835, by the London Horticultural Society. In all its habits and in its appearance it resembles *C. grandiflora*, but is much handsomer, the flowers being three times the size, and remain expanded all day long, whether in sunshine or shade, while those of *C. grandiflora* open only in the sunshine. It is apparently a half-shrubby plant, capable of being treated with advantage as an annual.

MONOCOTYLEDONES.

ORCHIDACEÆ. TRIBE EPIDENDREÆ.

Epidendrum tridactylum, *var.* **pallidum.** This plant is very near to *E. tridactylum*, *Bot. Reg.*, but from that it differs in being much paler in the flowers, in not having the sepals roundish, but obovate-lanceolate, and the column not being green but yellowish. It is a native of Brazil, and plants of it were sent to the Birmingham Botanical and Horticultural Society from its native country, by E. W. Fry, Esq. It is also in the collection of George Barker, Esq. Its flowers are small, and of no beauty. It is only deserving of cultivation as a botanical variety.

Brasavola Martiana. Lindl. Dr. Von Martius' Brasavola. *Bot. Reg.* N. S. t. 5. This distinct species was imported from Berbice by Messrs. Loddiges. It was originally discovered by Dr. Von Martius on the banks of the Rio Negro in Brazil, and was described by Dr. Lindley at p. 1914 from dried specimens in that gentleman's herbarium. It is allied to *B. cucullata* and *amazonica* by its fringed labellum; it has much smaller flowers than the former, and the labellum is of a different form: the latter has a one-sided raceme, and the labellum contracted in the middle, so as to be distinctly divided into a hypochilium and epichilium. *Bot. Reg.*

§ VANDEÆ.

Odontoglossum Rossii. (*Sp. nov.*) Sepalis lanceolatis acuminatis, maculatis, supremo latiori; petalis elliptico lanceolatis basi maculatis; labello magno cordato obtuso crispo, ungue cristato, cristâ carnosâ elevatâ apice obliquè truncatâ retrorsùm bilobâ cucullatâ.

This is a handsome species of Odontoglossum, imported by George Barker, Esq. of Springfield, near Birmingham, in whose collection it flowered in December last. The labellum is white, having the crest at the base of a bright yellow colour; the sepals and petals are blotched with brown.

Stanhopea tigrina. Bateman. (*Tiger-flowered Stanhopea.*) *Bot. Reg.* N. S. t. 1. This is the most beautiful of all the Stanhopeas known in this country; and however well executed the figure may be in the above work, it is impossible that such plants can be executed in cheap publications in a style equal to those of Mr. Bateman's in his Orchidaceæ of Mexico and Guatimala, where the price is nearly ten times the amount. It is therefore to that magnificent publication persons must refer, if they wish to see what the plant really is.

This species is distinguished by having the epichilium shallowly 3-lobed, in which respect it corresponds with no other hitherto discovered except *S. saccato*, which is extremely different. The inner surface of the hypochilium will be found very remarkable, being broken up into glandular lamellæ, which radiate from the base of a kind of ovate which is itself directed towards the cavity they occupy.

This plant is in the collection of Messrs. Rollisons, Tooting, and from a plant in that establishment Dr. Lindley is indebted for the figure. Mr. Bateman states it to be a native of the neighbourhood of Xalapa, and was imported by Messrs. Low. It is said to be among the easiest of the genus to cultivate. The fragrance of the flowers is very peculiar, resembling a mixture of melon and vanilla. *Bot. Reg.*

JUNCEÆ. DEC.

XEROTES LONGIFOLIA. R. Brown. *(Long-leaved Xerotes.)* *Bot. Reg.* N. S. t. 3. This is a hard, dry, evergreen-leaved plant, exhibiting a state of the rush tribe when they assume a state materially different from that of their type. It is a native of Van Diemen's Land, where it is common in various soils throughout the colony, forming large tufts. It is of no value except as a botanical rarity. *Bot. Reg.*

CALENDAR OF GARDENING OPERATIONS FOR FEBRUARY.

Towards the middle of the month, when tan is used in the plant-house, it ought to be renewed by adding about one-fourth of new tan, the tan in the pit being turned and the old and new tan being well mixed together. *Gloxinias*, *Gesnerias*, *Begonias*, *Hedychium*, and other bulbous and tuberous-rooted plants which have been dormant during the winter and kept rather dry, should be repotted into fresh soil. The temperature of the stove may also now be increased by degrees.

Little more will be required in the greenhouse than what has been for the two previous months.

Pelargoniums, *Verbenas*, *Fuchsias*, and any other plants for turning out into the open borders in May and June that were struck in autumn and had been kept in store-pots, may now be planted singly in small pots, and if placed in a gentle heat will grow rapidly. Cuttings for the same purpose may now be planted freely, as the growing will have commenced in the houses.

Some of the alpines preserved in the cold frames will now begin to grow, and as some are most successfully divided at this time, they should be attended to when they commence growing. The smaller sorts of herbaceous plants ought to be occasionally looked over, and any thrown out by the frost ought to be pressed down into the soil, otherwise their roots will soon perish and cause the loss of the plants.

Seeds of stove and greenhouse plants may now be sown where there is convenience for doing so; as by getting them in early, they will get to be strong plants before autumn.

Pruning of gooseberry, currants, and deciduous shrubs, digging of shrubberies, and other winter work, ought to be finished or nearly so this month, so as to be able to commence sowing, planting, &c., in March, which, if fine, is always a busy month with the horticulturist.